FORT TOTTEN
U.S. ARMY FACILITY
UST CLOSURE REPORT
11 SITES

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The U.S. Army Corps of Engineers (USACE) has tasked IT Corporation to remove eleven USTs at Fort Totten. Fort Totten is located in the northeast portion of the Borough of Queens, New York City, New York. The purpose of this work is to support the eventual excessing and transfer of property in accordance with the 1995 Base Realignment and Closure Program (BRAC). Work for this assignment was performed under Contract No. DACA31-95-D-0083, Delivery Order 0006. The work comprised removal of eleven USTs, contaminated soil removal, associated soil sampling, and closure report preparation.

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LIST OF ACRONYMS

AGV .... Alternative Guidance Value
bgs .... Below ground surface
BRAC .... Base Realignment and Closure Program
NYSDEC .... New York State Department of Environmental Conservation
PID .... Photoionization detector
ppb .... Part per billion
ppm .... Part per million
QC..................... Quality Control
RCRA............... Resource Conservation and Recovery Act
SVOC............... Semivolatile Organic Compound
TCLP................ Toxicity Characteristic Leaching Procedure
TERC .... Total Environmental Restoration Contract
TOX.................. total organic halides
TPH-DRO .... Total petroleum hydrocarbons – diesel range organics
USACE............ U.S. Army Corps of Engineers
USEPA............ U.S. Environmental Protection Agency
UST.................. Underground Storage Tank
VOC .... Volatile Organic Compound
WP .... Work Plan

1.0 INTRODUCTION

The U.S. Army Corps of Engineers (USACE) has tasked IT Corporation to perform UST closure tasks for eleven sites at Fort Totten. Fort Totten is located in the northeast portion of the Borough of Queens, New York City, New York. The facility is situated on a peninsula extending out into Little Neck Bay (**Figure 1-1**). The purpose of this work is to support the eventual excessing and transfer of property in accordance with the 1995 Base Realignment and Closure Program (BRAC). Work for this assignment was performed under Contract No. DACA31-95-D-0083, Delivery Order 0006. The work was performed to remove 11 USTs and to remove additional contaminated soil at four of the former UST sites.

A site map of Fort Totten is provided as **Figure 1-2**. Fort Totten consists of the "Old Fort" area, which covers the northern boundary of the site, and the "New Fort" area, which covers the remainder of the site. The Old Fort area was built by the U.S. Army in 1860 and has since been designated as a Federal Historic Site.

1.1 PURPOSE AND APPROACH

The purpose of this report is to present the results of eleven UST removals and additional soil removal at Fort Totten. The UST removal activities occurred in November and December 1999 at the following Buildings: 137, 139, 141, 407, 424, 427, 430, 505, 506, 512, and 513. Additional contaminated soil was removed at the former UST sites in September 2000 at the following Buildings: 137, 141, 424, and 430.

1.2 REPORT ORGANIZATION

This report is organized as follows:

Section 1.0 – Introduction

Section 2.0 – Technical Approach to Field Operations

Section 3.0 – Chemical Data Quality and Validation

Section 4.0 – Soil Remediation Guidance

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- Appendix C – Soil Sampling Analytical Results
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2.0 TECHNICAL APPROACH TO FIELD OPERATIONS

The purpose of this work was to remove eleven USTs at Fort Totten, New York. The methodology, procedures, measurements, and observations that were required for each type of field activity are documented in the following sections. These activities included:

- UST Removals;
- Soil Excavation;
- Soil Sampling;
- Sample Preparation and Shipping; and
- Decontamination Procedures.

Only those procedures which relate to investigative activities will be discussed in this section. All removals will be discussed in Section 5.0 on a site-specific basis. Standard procedures have been outlined for all field activities in accordance with the requirements of the USACE, U.S. Environmental Protection Agency (USEPA), and New York State Department of Environmental Conservation (NYSDEC). Details concerning sample depths, locations, and analyses are presented in Section 5.0.

2.1 UST REMOVALS

Fuel oil in each UST was pumped out before removing the tanks and was transported offsite to a fuel oil recycling facility. Residual fuel oil and sludge was pumped out using a vac-truck. UST removals were completed by qualified personnel using a backhoe. The tanks were staged on plastic, cut open, and cleaned. The fiberglass tanks were removed offsite for proper disposal. The steel tanks were removed offsite to a scrap metal recycler.

2.2 SOIL EXCAVATION

The removal of petroleum-contaminated soil was accomplished by qualified personnel using a backhoe. Soil removed from the excavation was visually inspected for contamination and screened with a PID. Contaminated soil was temporarily staged on plastic sheeting for offsite disposal. The contaminated soil piles were covered with plastic sheeting after the excavation was completed. Clean soil was staged separately. Soil removal did not exceed the depth of the water table. Completed excavations were lined with plastic sheeting and backfilled and compacted to grade with clean excavated soil and additional clean fill.

2.3 SOIL SAMPLING

The characterization of soils was accomplished by careful logging and sampling of surface and subsurface soils. A Site Geologist was present during all soil sample collection activities to maintain descriptive logs and collect appropriate samples for chemical analysis. Samples were screened and/or prioritized in the field by visual inspection for staining or discoloration and/or with a photoionization detector (PID) as appropriate.

Soil sampling activities proceeded as follows:

- Clearance of all underground utilities was conducted prior to soil removal activities.
- Sampling was performed under direct supervision of the assigned Site Geologist.
- All soil sampling points were located to map accuracy at the time of sample collection.

2.3.1 Soil Sampling Acquisition Procedures

2.3.1.1 UST Removal and Soil Excavations

UST removals were completed by qualified personnel using a backhoe. Soil samples were collected from the backhoe bucket according to the procedures specified in Section 2.3.2. Soils in contact with the walls of the backhoe bucket were avoided during sample collection activities. No personnel entered the excavations at any time.

2.3.2 Soil Sample Handling and Collection Procedures

During the sampling phase, the volatile organic samples were collected first and were transferred from the backhoe bucket, in a manner such that air space was minimized in the sample bottle. Material for composite soil samples was placed in pre-cleaned stainless steel bowls, coned and quartered according to NYSDEC protocol, and placed in the appropriate sample bottles for non-volatile analyses. For composite soil samples analyzed for Volatile Organic Compounds (VOCs) and Semivolatile Organic Compounds (SVOCs), a portion of each sample was placed in the appropriate bottles as the samples were collected. The remaining sample portions were homogenized as described above and placed in the appropriate sample bottles for non-volatile analyses. Each sample bottle contained a sample label, which included the project name, sample number, analysis to be performed, time, date, and sampler's initials. Disposable latex gloves were used during all sampling activities and were changed between each sample location.

Sample labels and the chain-of-custody were completed following the collection of each sample. The labels were placed on the sample bottles and the bottles were immediately placed into a cooler. The cooler was iced and samples were kept at a temperature of 4°C. The completed chain of custody was sealed in a plastic bag inside the sample cooler.

2.4 SAMPLE PREPARATION AND SHIPPING

Samples were returned to the sample preparation area at the end of each day. The samples were prepared by the site personnel for shipment to the laboratory in the following manner:

- Sample bottles were removed from the field cooler and inspected for integrity;
- Labels and chains of custody were inspected for completeness;
- Sample bottles were wrapped with bubble wrap;
- The bottom and sides of a clean cooler were lined with bubble wrap;
- Samples were placed in the cooler using additional bubble wrap between bottles to provide a snug fit;
- Double-bagged ice was placed above the sample bottles;
- The Chain-of-Custody forms were placed in a zip-lock bag and the bag was taped to the inside of the cooler lid;
- The lid was secured to the cooler with tape; and
- IT Corporation personnel delivered the cooler(s) to the shipping agent.

2.5 DECONTAMINATION PROCEDURES

All equipment was thoroughly decontaminated before use and between sampling locations. Stainless steel bowls and spoons were cleaned with a tap water and Alconox wash, rinsed with tap water, and rinsed with deionized water. All decontaminated equipment was stored on plastic sheeting in a designated area. Equipment stored for long periods was covered with clean plastic sheeting or placed in clean plastic bags. Any direct contamination was removed with a disposable wipe.

3.0 CHEMICAL DATA QUALITY AND VALIDATION

This section presents an assessment of data quality as outlined in the September 1996 Fort Totten WP. This assessment includes a review of field QC samples and a summary of the validation of 10% of the data.

3.1 LABORATORY SERVICES

The analytical services for the 11 UST removals during November and December 1999 were provided by Waste Stream Technology. The analytical services for the additional soil removal performed in September 2000 were provided by Severn Trent Laboratories, Inc. Waste Stream Technology and Severn Trent Laboratories, Inc. are New York certified and USACE validated laboratories.

3.2 CONTAMINATION ASSESSMENT

A contamination assessment was performed to determine the impact of contaminant contributions originating from non-point sources. The contamination assessment included the collection of duplicate samples. Field duplicates were collected to identify the cumulative precision of the sampling and analytical process. **Table 3-1** lists the duplicate samples collected at Fort Totten. The duplicate sample analytical results for soil are tabulated in **Table 5-2**. All QC analytical data for these duplicate soil samples are provided in **Appendix C**.

3.3 DATA VALIDATION

As stated in the September 1996 Fort Totten WP, 10 percent of the data were validated using USEPA Region II protocol. Data validation memorandums are presented in **Appendix A**. The following specific items were reviewed by IT Corporation to determine limitations for the data:

- Sample collection data;
- Sample holding times and methods of preservation;
- Detection limits compliance;
- Documentation that the analytical results are in control and within the linear range of the analysis;
- Associated calibration data to confirm that the linear regression is > 0.995;
- Documentation on the traceability of calibration and control standards;
- Associated control checks to confirm that the daily analysis is in control;
- Documentation of analytical methodology and QC methodology; and
- The potential presence of interferences and inaccuracy in analytical methods (check laboratory blanks and spike recoveries).

4.0 SOIL REMEDIATION GUIDANCE

This section describes the Petroleum-Contaminated Soil Guidance Policy document published by the NYSDEC which is presented in **Appendix B**. This document is included to provide relevant guidance and standard values for comparison to site derived data.

4.1 NYSDEC STARS MEMO #1: PETROLEUM-CONTAMINATED SOIL GUIDANCE POLICY

The Petroleum-Contaminated Soil Guidance Policy provides guidance on the handling, disposal, and/or reuse of non-hazardous petroleum-contaminated soils. The values listed in this document are not standards, but are intended to provide guidance in determining whether the concentration of contaminants in soil require investigation and remediation to levels which do not pose a threat to groundwater, human health, and/or the environment (NYSDEC, 1992). All soil sample analytical results associated with the UST and soil excavations were compared to the TCLP Alternative Guidance Values (AGV) for fuel oil contaminated soil as shown in **Table 5-2**.

5.0 UST REMOVAL ACTIVITIES

Eleven USTs were removed at Fort Totten during November and December 1999. Additional petroleum-contaminated soil was removed from four of the former UST sites during September 2000. A list of the soil samples collected is provided in **Table 5-1**. The soil analytical data is shown in **Table 5-2**. A photo log of field activities is provided in **Appendix D**. The following describes the removal activities and analytical results associated with each site.

5.1 BUILDING 137 UST

A 1,000-gallon steel UST installed in the early 1950's was located to the south of Building 137 (**Figure 5-1**). The tank reportedly contained #2 fuel oil and was used to store heating oil for Building 137. The UST passed a tightness test performed in December 1997.

5.1.1 Initial UST Removal

The UST was removed and measured 10.7 ft long and 4 ft in diameter (**Figure 5-1**). The final excavation measured 20 ft by 10 ft and 9 ft deep. The tank was in poor condition and had holes in the bottom of the tank. The excavation contained soil mixed with historic fill type debris such as glass bottles, cans, and wood. The soil was gray and black in color with petroleum odors and PID readings up to 27 ppm. The contamination was reported to the NYSDEC Spill Hotline and was recorded as Spill No. 9910568. Approximately 20 cubic yards of contaminated soil were removed from the excavation for offsite disposal. One soil sample was collected from the base of the excavation. Sample FT137-BE1 (10-10.5 ft bgs) was collected and analyzed for VOCs and SVOCs. The sample had a petroleum odor and a PID reading of 15 ppm. The excavation was backfilled to grade with clean fill.

Twelve VOCs were detected in sample FT137-BE1 above the TCLP AGV. The TCLP AGV of 100 ppb was exceeded for toluene (273 ppb), ethylbenzene (1,970 ppb), m,p-xylene (21,600 ppb), o-xylene (12,000 ppb), isopropylbenzene (2,350 ppb), n-propylbenzene (2,810 ppb), 1,3,5-trimethylbenzene (23,500 ppb), tert-butylbenzene (694 ppb), 1,2,4-trimethylbenzene (60,600 ppb), sec-butylbenzene (7,220 ppb), and p-isopropyltoluene (5,820 ppb). Naphthalene (32,200 ppb) was detected above the TCLP AGV of 200 ppb.

Five SVOCs were detected in sample FT137-BE1 above the TCLP AGV. The TCLP AGV of 1,000 ppb was exceeded for anthracene (2,810 ppb), fluorene (13,900 ppb), phenanthrene (20,400 ppb), and pyrene (3,060 ppb). Acenaphthene (3,810 ppb) was detected above the TCLP AGV of 400 ppb.

5.1.2 Additional Soil Excavation

Based on the elevated concentrations of VOCs and SVOCs detected at the former Building 137 UST excavation, additional petroleum contaminated soil was removed. The contaminated soil was observed at depths below 6 ft. The soil contained gray and black ash and historic fill type debris such as broken glass and pieces of rusty metal. The excavated materials had a strong fuel oil odor and PID readings up to 132 ppm. The final excavation measured 22 ft by 18 ft and 12.5 ft deep (**Figure 5-2**). Not all of the contaminated soil was removed from the excavation due to the limited reach of the backhoe and the tight constraints of the working area. Groundwater was not encountered in the excavation. Approximately 70 cubic yards of contaminated soil were removed from the excavation for offsite disposal.

Five composite soil samples and one duplicate sample were collected from the excavation and analyzed for VOCs and SVOCs (**Figure 5-2**). Samples FT137BE2 (13-14 ft bgs) and duplicate sample FT137BE2D (13-14 ft bgs) were collected from the base of the excavation and had a PID reading of 300 ppm. Samples FT137SW1 (east sidewall), FT137SW2 (south sidewall), FT137SW3 (north sidewall), and FT137SW4 (west sidewall), were collected from 11-12 ft bgs from the excavation sidewalls and had PID readings ranging from 0-320 ppm. The excavation was backfilled to grade with clean excavated soil and additional clean fill.

Six VOCs were detected in sample FT137SW4 above the TCLP AGV. The TCLP AGV of 100 ppb was exceeded for 1,3,5-trimethylbenzene (420 ppb), 1,2,4-trimethylbenzene (640 ppb), sec-butylbenzene (14,000 ppb), and p-isopropyltoluene (6,300 ppb) and n-butylbenzene (9,700 ppb).

Naphthalene (4,800 ppb) was detected above the TCLP AGV of 200 ppb. P-isopropyltoluene was detected above the TCLP AGV in samples FT137BE2 (280 ppb) and FT137BE2D (370 ppb).

Fourteen SVOCs were detected above the TCLP AGV. Five or more SVOCs were detected above the TCLP AGV in each sample. The following SVOCs were detected above the TCLP AGV of 1,000 ppb: anthracene (1,100-1,200 ppb), fluorene (4,500-17,000 ppb), phenanthrene (8,200-30,000 ppb), pyrene (1,500-4,500 ppb), fluoranthene (1,400-2,600 ppb), and dibenzo(a,h)anthracene (230 and 280 ppb). The following SVOCs were detected above the TCLP AGV of 0.04 ppb: benzo(a)anthracene (92-1,300 ppb), benzo(b)fluoranthene (89-1,400 ppb), benzo(k)fluoranthene (200-1,200 ppb), benzo(a)pyrene (180-1,400 ppb), benzo(g,h,i)perylene (130-850 ppb), indeno(1,2,3-cd)pyrene (880 and 890 ppb), and chrysene (230-1,700 ppb). Acenaphthene (3,300-11,000 ppb) was detected above the TCLP AGV of 400 ppb.

5.2 BUILDING 139 UST

A 1,000-gallon steel UST installed in the early 1950's was located near the northwest corner of Building 139 (**Figure 5-3**). The tank reportedly contained #2 fuel oil and was used to store heating oil for Building 139. The UST passed a tightness test performed in December 1997.

The UST was removed and measured 11 ft long and 4 ft in diameter (**Figure 5-3**). The final excavation measured 17 ft by 9 ft and 7 ft deep. The tank was in fair condition. There were no signs of contamination in the excavation. The excavation was backfilled to grade with the excavated soil and additional clean fill after collecting soil samples.

Five soil samples were collected from 7.5-8 ft bgs from the excavation and were analyzed for VOCs and SVOCs. One sample was collected at the base of each sidewall (FT139-SW1, FT139-SW2, FT139-SW3, and FT139-SW4) and one sample was collected from the center of the excavation (FT139-BE1).

There were no VOCs detected above the TCLP AGV in any of the samples. SVOCs were detected above the TCLP AGV in three of the five samples. Chrysene was detected above the TCLP AGV of 0.04 ppb in three samples (FT139-SW1, FT139-SW2, and FT139-SW3) at concentrations ranging from 78 to 286 ppb. Benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, and benzo(a)pyrene were detected above the TCLP AGV of 0.04 ppb in two samples (FT139-SW2 and FT139-SW3) at concentrations ranging from 91 to 291 ppb. Phenanthrene was detected above the TCLP AGV of 1,000 ppb in sample FT139-SW2 at a concentration of 1,010 ppb. Benzo(g,h,i)perylene and indeno(1,2,3-cd)pyrene were detected above the TCLP AGV of 0.04 ppb in sample FT139-SW2 at concentrations of 89 and 98 ppb, respectively.

5.3 BUILDING 141 UST

A 1,500-gallon steel UST installed in the early 1950's was located to the north of Building 141 (**Figure 5-4**). The tank reportedly contained #2 fuel oil and was used to store heating oil for Building 141. The UST passed a tightness test performed in December 1997.

5.3.1 Initial UST Removal

The UST was removed and measured 9 ft long and 5.3 ft in diameter (**Figure 5-4**). The final excavation measured 17 ft by 9 ft and 7.5 ft deep. The tank was in fair condition. The excavation contained historic fill type debris such as broken glass and pieces of rusty metal and the soil had a petroleum odor and PID readings up to 17 ppm. The contamination was reported to the NYSDEC Spill Hotline and was recorded as Spill No. 9910538. Approximately 25 cubic yards of contaminated soil were removed from the excavation. The excavation was backfilled to grade with clean fill after collecting a soil sample.

One soil sample was collected from the base of the excavation. Sample FT141-BE1 (10-10.5 ft bgs) was collected and analyzed for VOCs and SVOCs. The sample was grayish-black in color and had a petroleum odor and a PID reading of 16 ppm.

Six VOCs were detected above the TCLP AGV in sample FT141-BE1. Isopropylbenzene (159 ppb), n-propylbenzene (356 ppb), 1,2,4-trimethylbenzene (168 ppb), sec-butylbenzene (456 ppb), and n-butylbenzene (844 ppb) were detected above the TCLP AGV of 100 ppb. Naphthalene was detected at a concentration of 300 ppb above the TCLP AGV of 200 ppb.

Four SVOCs were detected in sample FT141-BE1 above the TCLP AGV. Anthracene (1,550 ppb) ppb), fluorene (13,500 ppb), and phenanthrene (16,600 ppb) were detected above the TCLP AGV of 1,000 ppb. Acenaphthene (5,670 ppb) was detected above the TCLP AGV of 400 ppb.

5.3.2 Additional Soil Excavation

Based on the elevated concentrations of VOCs and SVOCs detected at the former Building 141 UST excavation, additional petroleum contaminated soil was removed. The contaminated soil was observed at depths below 5 ft. The soil contained black, gray, and grayish-white ash and historic fill type debris such as broken glass and pieces of wood and metal. The excavated materials had a strong fuel oil odor and PID readings up to 122 ppm. The final excavation measured 17 ft by 15 ft and 15 ft deep (**Figure 5-5**). Not all of the contaminated soil was removed from the excavation due to the limited reach of the backhoe and the tight constraints of the working area. Groundwater was not encountered in the excavation. Approximately 50 cubic yards of contaminated soil were removed from the excavation for offsite disposal.

Five composite soil samples were collected from the excavation and analyzed for VOCs and SVOCs (**Figure 5-5**). Sample FT141BE2 (15.5-16 ft bgs) was collected from the base of the excavation and had a PID reading of 110 ppm. Samples FT141SW1 (west sidewall, 11-13 ft bgs), FT141SW2 (north sidewall, 11-13 ft bgs), FT141SW3 (south sidewall, 11-13 ft bgs), and FT141SW4 (east sidewall, 11-15 ft bgs) were collected from the excavation sidewalls and had PID readings ranging from 0-55 ppm. The excavation was backfilled to grade with clean excavated soil and additional clean fill.

Six VOCs were detected above the TCLP AGV. Two or more VOCS were detected above the TCLP AGV in four of the samples. The following VOCs were detected above the TCLP AGV of 100 ppb: n-propylbenzene (1,300-2,300 ppb), 1,2,4-trimethylbenzene (1,700 ppb), sec-butylbenzene (1,500-3,100 ppb), p-isopropyltoluene (490 ppb) and n-butylbenzene (700-3,600 ppb). Naphthalene (6,200-15,000 ppb) was detected above the TCLP AGV of 200 ppb.

Thirteen SVOCs were detected above the TCLP AGV. Two or more SVOCs were detected above the TCLP AGV in four of the samples (FT141BE2, FT141SW1, FT141SW2, and FT141SW3). The following SVOCs were detected above the TCLP AGV of 1,000 ppb: anthracene (1,300 and 1,400 ppb), fluorene (3,800-10,000 ppb), phenanthrene (1,100-17,000 ppb), pyrene (1,400 and 2,200 ppb), and fluoranthene (1,400-1,1800 ppb). The following SVOCs were detected above the TCLP AGV of 0.04 ppb: benzo(a)anthracene (270-620 ppb), benzo(b)fluoranthene (220 and 530 ppb), benzo(k)fluoranthene (190 and 500 ppb), benzo(a)pyrene (200 and 550 ppb), benzo(g,h,i)perylene (270 ppb), indeno(1,2,3-cd)pyrene (270 ppb), and chrysene (320-770 ppb). Acenaphthene (490-6,600 ppb) was detected above the TCLP AGV of 400 ppb.

There were no VOCs or SVOCs detected in sample FT141SW4.

5.4 BUILDING 407 UST

A 1,000-gallon fiberglass UST installed in July 1995 was located to the south of Building 407 (**Figure 5-6**). The tank reportedly contained #2 fuel oil and was used to store heating oil for Building 407.

The UST was removed and measured 11.5 ft long and 4.3 ft in diameter (**Figure 5-6**). The final excavation measured 19 ft by 10 ft and 6 ft deep. The tank was in good condition. There were no signs of contamination in the excavation. The excavation was backfilled to grade with the excavated soil and additional clean fill after collecting soil samples.

Five soil samples were collected from 6.5-7 ft bgs from the excavation and were analyzed for VOCs and SVOCs. One sample was collected at the base of each sidewall (FT407-SW1, FT407-SW2, FT407-SW3, and FT407-SW4) and one sample was collected from the center of the excavation (FT407-BE1). There were no VOCs or SVOCs detected above the TCLP AGV in any of the samples.

5.5 BUILDING 424 UST

A 2,000-gallon steel UST installed in the early 1950's was located near the northwest corner of Building 424 (**Figure 5-7**). The tank reportedly contained #2 fuel oil and was used to store heating oil for Building 424. The UST passed a tightness test performed in September 1995.

5.5.1 Initial UST Removal

The UST was removed and measured 12 ft long and 5.3 ft in diameter (**Figure 5-7**). The final excavation measured approximately 17 ft by 15 ft and 13 ft deep. The groundwater table was encountered at 13 ft bgs. The tank was in fair condition. A hole was observed in the side of the tank, which may have been caused by the backhoe during removal. The excavation contained gray petroleum contaminated soil and PID readings up to 30 ppm. The contamination was reported to the NYSDEC Spill Hotline and was recorded as Spill No. 9910389. The contaminated soil was observed to the depth of the water table. Approximately 30 cubic yards of contaminated soil were removed from the excavation. The excavation was backfilled to grade with clean fill after collecting soil samples.

One soil sample and a duplicate soil sample were collected from the base of the excavation. Sample FT424-BE1 (9-9.5 ft bgs) and duplicate sample FT424-BE1D (9-9.5 ft bgs) were collected and analyzed for VOCs and SVOCs. The samples were stained gray with a strong petroleum odor and a PID reading of 20 ppm.

Three VOCs were detected above the TCLP AGV in both samples collected. Sec-butylbenzene and n-butylbenzene were detected at concentrations ranging from 127 to 217 ppb above the TCLP AGV of 100 ppb. Naphthalene was detected at concentrations of 274 and 277 ppb above the TCLP AGV of 200 ppb.

One SVOC was detected in sample FT424-BE1 above the TCLP AGV. Phenanthrene (1,530 ppb) was detected above the TCLP AGV of 1,000 ppb.

5.5.2 Additional Soil Excavation

Based on the elevated concentrations of VOCs and SVOCs detected at the former Building 424 UST excavation, additional petroleum contaminated soil was removed. The contaminated soil was observed at depths below 8 ft. The contaminated soil was silt and clayey-silt with a strong fuel oil odor and PID readings up to 22 ppm. The concrete pad for the former UST was uncovered at 9 ft bgs. Groundwater was encountered at 10.5 ft bgs. The final excavation measured 22 ft by 14 ft and 12.5 ft deep (**Figure 5-8**). Not all of the contaminated soil was removed from the excavation due to the limited reach of the backhoe, the very tight constraints of the contaminated soil between the concrete pad and beneath the building foundation, and the contamination extended below the water table. Approximately 25 cubic yards of contaminated soil were removed from the excavation for offsite disposal.

Five composite soil samples were collected from the excavation and analyzed for VOCs and SVOCs (**Figure 5-8**). Sample FT424BE2 (12-12.5 ft bgs) was collected from the base of the excavation and had a PID reading of 8 ppm. Samples FT424SW1 (east sidewall), FT424SW2 (north sidewall, FT424SW3 (west sidewall), and FT424SW4 (south sidewall) were collected from 7.5-8 ft bgs along the excavation sidewalls and had PID readings of 0.0 ppm. The excavation was backfilled and compacted to grade with clean excavated soil and additional clean fill.

Three VOCs were detected above the TCLP AGV in sample FT424BE2. Sec-butylbenzene (2,000 ppb) and n-propylbenzene (1,600 ppb) were detected above the TCLP AGV of 100 ppb. Naphthalene (3,300 ppb) was detected above the TCLP AGV of 200 ppb.

Four SVOCs were detected above the TCLP AGV in sample FT424BE2. Fluorene (1,400 ppb) and phenanthrene (3,500 ppb) were detected above the TCLP AGV of 1,000 ppb. Acenaphthene (1,200 ppb) was detected above the TCLP AGV of 400 ppb. Chrysene (70 ppb) was detected above the TCLP AGV of 0.04 ppb.

There were no VOCs or SVOCs detected above the TCLP AGV in samples FT424SW1, FT424SW2, FT424SW3, and FT424SW4.

5.6 BUILDING 427 UST

A 1,500-gallon steel UST installed in the early 1950's was located to the northwest of Building 427 (**Figure 5-9**). The tank reportedly contained #2 fuel oil and was used to store heating oil for Building 427. The UST passed a tightness test performed in September 1995.

The UST was removed and measured 9 ft long and 5.3 ft in diameter (**Figure 5-9**). The final excavation measured approximately 20 ft by 14 ft and 6 ft deep. The tank was in good condition. The northeast portion of the excavation contained gray contaminated soil with a petroleum odor and PID readings of 8-12 ppm. The contamination was reported to the NYSDEC Spill Hotline and was recorded as Spill No. 9910433. Approximately 25 cubic yards of contaminated soil were removed from the excavation and disposed of offsite. The excavation was backfilled to grade with clean fill after collecting soil samples.

Four soil samples were collected from 6.5-7 ft bgs from the excavation and were analyzed for VOCs and SVOCs. One sample was collected at the base of each sidewall (FT427-SW1, FT427-SW2, FT427-SW3, and FT427-SW4). There were no VOCs or SVOCs detected above the TCLP AGV in any of the samples.

5.7 BUILDING 430 UST

A 1,500-gallon steel UST installed in the early 1950's was located to the northeast of Building 430 (**Figure 5-10**). The tank reportedly contained #2 fuel oil and was used to store heating oil for Building 430. The UST passed a tightness test performed in September 1995.

5.7.1 Initial UST Excavation

The UST was removed and measured 9 ft long and 5.3 ft in diameter (**Figure 5-10**). The final excavation measured approximately 19 ft by 19 ft and 6.5 ft deep. The tank was in good condition. The excavation contained gray and grayish-black soil with a petroleum odor and PID readings up to 25 ppm. The contamination was reported to the NYSDEC Spill Hotline and was recorded as Spill No. 9910434. Approximately 75 cubic yards of contaminated soil were removed from the excavation. The excavation was backfilled to grade with clean fill after collecting two soil samples.

One soil sample (FT430-BE1) was collected from the base of the excavation and a second soil sample (FT430-SW1) was collected from a sidewall. Each sample was analyzed for VOCs and SVOCs. Sample FT430-BE1 was collected from 8-8.5 ft bgs and was stained black with a petroleum odor and a PID reading of 12 ppm. Sample FT430-SW1 was collected from 7-7.5 ft bgs and was stained grayish-black with a petroleum odor and a PID reading of 25 ppm.

One VOC and two SVOCs were detected above the TCLP AGV in sample FT430-BE1. Sec-butylbenzene was detected at a concentration of 140 ppb above the TCLP AGV of 100 ppb. Acenaphthene was detected at a concentration of 499 ppb above the TCLP AGV of 400 ppb. Phenanthrene was detected at a concentration of 2,120 ppb above the TCLP AGV of 1,000 ppb.

Twelve VOCs were detected above the TCLP AGV in sample FT430-SW1. Toluene (173 ppb), ethylbenzene (3,480 ppb), m,p-xylene (11,200 ppb), o-xylene (3,200 ppb), isopropylbenzene (2,810 ppb), n-propylbenzene (6,170 ppb), 1,3,5-trimethybenzene (11,900 ppb), tert-butylbenzene (186 ppb), 1,2,4-trimethylbenzene (37,700 ppb), sec-butylbenzene (4,790 ppb), and p-isopropyltoluene (3,830 ppb) were detected above the TCLP AGV of 100 ppb. Naphthalene was detected at a concentration of 2,280 ppb above the TCLP AGV of 200 ppb.

Four SVOCs were detected above the TCLP AGV in sample FT430-SW1. Fluorene (8,470 ppb), phenanthrene (16,000 ppb), and pyrene (1,900 ppb) were detected above the TCLP AGV of 1,000 ppb. Acenaphthene (4,230 ppb) was detected above the TCLP AGV of 400 ppb.

5.7.2 Additional Soil Excavation

Based on the elevated concentrations of VOCs and SVOCs detected from the former Building 430 UST excavation, additional petroleum contaminated soil was removed. The contaminated soil was observed at depths below 1-3 ft bgs. The contaminated soil was silt and clayey-silt, stained gray and black with a strong fuel oil odor and PID readings up to 147 ppm. Groundwater was encountered at 7 ft bgs. The final excavation measured 21 ft by 19 ft and 8 ft deep (**Figure 5-11**). Approximately 85 cubic yards of contaminated soil were removed from the excavation for offsite disposal.

Three soil samples were collected from the excavation and analyzed for VOCs and SVOCs (**Figure 5-11**). Samples FT430SW2, FT430SW3, and FT430SW4 were collected from 6.5-7 ft bgs along the excavation sidewalls and had PID readings of 0.0 ppm. The excavation was backfilled and compacted to grade with clean excavated soil and additional clean fill.

There were no VOCs or SVOCs detected above the TCLP AGV in samples FT430SW2, FT430SW3, and FT439SW4.

5.8 BUILDING 505 UST

A 1,000-gallon fiberglass UST installed in July 1995 was located near the east corner of Building 505 (**Figure 5-12**). The tank reportedly contained #2 fuel oil and was used to store heating oil for Building 505.

The UST was removed and measured 11.5 ft long and 4.3 ft in diameter (**Figure 5-12**). The final excavation measured 21 ft by 10 ft and 6 ft deep. The tank was in good condition. There were no signs of contamination in the excavation. The excavation was backfilled to grade with the excavated soil and additional clean fill after collecting soil samples.

Five soil samples were collected from 6.5-7 ft bgs from the excavation and were analyzed for VOCs and SVOCs. One sample was collected at the base of each sidewall (FT505-SW1, FT505-SW2, FT505-SW3, and FT505-SW4) and one sample was collected from the center of the excavation (FT505-BE1).

There were no VOCs detected above the TCLP AGV in any of the samples. Five SVOCs were detected above the TCLP AGV in sample FT505-BE1. Benzo(a)anthracene (75 ppb), benzo(b)fluoranthene (74 ppb), benzo(k)fluoranthene (95 ppb), benzo(a)pyrene (80 ppb), and chrysene (75 ppb) were detected above the TCLP AGV of 0.04 ppb.

5.9 BUILDING 506 UST

A 1,000-gallon fiberglass UST installed in July 1995 was located southwest of Building 506 (**Figure 5-13**). The tank reportedly contained #2 fuel oil and was used to store heating oil for Building 506.

The UST was removed and measured 11.5 ft long and 4.3 ft in diameter (**Figure 5-13**). The final excavation measured 18 ft by 10 ft and 6 ft deep. The tank was in good condition. There were no signs of contamination in the excavation. The excavation was backfilled to grade with the excavated soil and additional clean fill after collecting soil samples.

Five soil samples were collected from 6.5-7 ft bgs from the excavation and were analyzed for VOCs and SVOCs. One sample was collected at the base of each sidewall (FT506-SW1, FT506-SW2, FT506-SW3, and FT506-SW4) and one sample was collected from the center of the excavation (FT506-BE1).

There were no VOCs detected above the TCLP AGV in any of the samples. Two or more SVOCs were detected above the TCLP AGV in samples FT506-SW2, FT506-SW3, FT506-SW4, and FT506-BE1. Benzo(a)anthracene (73 to 122 ppb), benzo(b)fluoranthene (86 to 151 ppb), benzo(k)fluoranthene (88 to 156 ppb), benzo(a)pyrene (83 to 156 ppb), and chrysene (83 to 133 ppb) were detected above the TCLP AGV of 0.04 ppb.

5.10 BUILDING 512 UST

A 1,500-gallon steel UST installed in the early 1950's was located to the east of Building 512 (**Figure 5-14**). The tank reportedly contained #2 fuel oil and was used to store heating oil for Building 512. The UST passed a tightness test performed in September 1995.

The UST was removed and measured 9 ft long and 5.3 ft in diameter (**Figure 5-14**). The final excavation measured 16 ft by 10 ft and 7.5 ft deep. The tank was in good condition. There were no signs of contamination in the excavation. The excavation was backfilled to grade with the excavated soil and additional clean fill after collecting soil samples.

Five soil samples were collected from 8-8.5 ft bgs from the excavation and were analyzed for VOCs and SVOCs. One sample was collected at the base of each sidewall (FT512-SW1, FT512-SW2, FT512-SW3, and FT512-SW4) and one sample was collected from the center of the excavation (FT512-BE1).

There were no VOCs detected above the TCLP AGV in any of the samples. Seven or more SVOCs were detected above the TCLP AGV in samples FT512-SW2, FT512-SW3, FT512-SW4, and FT512-BE1. Benzo(a)anthracene (342 to 1,030 ppb), benzo(b)fluoranthene (411 to 1,350 ppb), benzo(k)fluoranthene (491 to 1,050 ppb), benzo(a)pyrene (494 to 1,410 ppb), benzo(g,h,i)perylene (249 to 511 ppb), indeno(1,2,3-cd)pyrene (252 to 567 ppb), and chrysene (396 to 1,100 ppb) were detected above the TCLP AGV of 0.04 ppb. Pyrene (1,040 to 1,920 ppb) and fluoranthene (1,030 to 1,390 ppb) were detected above the TCLP AGV of 1,000 ppb.

5.11 BUILDING 513 UST

A 1,500-gallon steel UST installed in the early 1950's was located to the east of Building 513 (**Figure 5-15**). The tank reportedly contained #2 fuel oil and was used to store heating oil for Building 513. The UST passed a tightness test performed in February 1998.

The UST was removed and measured 9 ft long and 5.3 ft in diameter (**Figure 5-15**). The final excavation measured 19 ft by 11 ft and 7.5 ft deep. The tank was in good condition. There were no signs of contamination in the excavation. The excavation was backfilled to grade with the excavated soil and additional clean fill after collecting soil samples.

Six soil samples were collected from 8-8.5 ft bgs from the excavation and were analyzed for VOCs and SVOCs. One sample was collected at the base of each sidewall (FT513-SW1, FT513-SW2, FT513-SW3, and FT513-SW4) and one sample was collected from the center of the excavation (FT513-BE1). A duplicate sample (FT513-SW1-D) was also collected.

There were no VOCs detected above the TCLP AGV in any of the samples. Seven or more SVOCs were detected above the TCLP AGV in samples FT513-SW1, FT513-SW1D, FT513-SW4, and FT513-BE1. Two SVOCs were detected above the TCLP AGV in sample FT513-SW2. Benzo(a)anthracene (109 to 836 ppb), benzo(b)fluoranthene (122 to 956 ppb), benzo(k)fluoranthene (156 to 956 ppb), benzo(a)pyrene (78 to 946 ppb), benzo(g,h,i)perylene (81 to 322 ppb), indeno(1,2,3-cd)pyrene (96 to 354 ppb), and chrysene (124 to 925 ppb) were detected above the TCLP AGV of 0.04 ppb. Pyrene (1,410 ppb) and fluoranthene (1,740 ppb) were detected above the TCLP AGV of 1,000 ppb.

6.0 INVESTIGATION DERIVED WASTE

Contaminated soil removed from UST excavations at Buildings 137, 141, 424, 427, and 430 in 1999 was temporarily covered and staged on plastic sheeting. Composite soil sample FT-WC was collected from these staged soils and was analyzed for cyanide, RCRA Characteristics, % solids, paint filter, diesel range organics, Full TCLP, VOCs, SVOCs, Pesticides/PCBs, Herbicides, and TOX. The waste characterization data is included in **Appendix C**. A total of 226 tons of contaminated soil was removed from Fort Totten in March 2000 for proper disposal. The non-hazardous material manifests are included in **Appendix E**.

The additional contaminated soil removed from the former UST sites at Buildings 137, 141, 424, and 430 in 2000 is being temporarily covered and staged on plastic sheeting. Composite soil sample FTWC1 was collected from these staged soils and was analyzed for Full TCLP, PCBs, pH, ignitability, and reactivity. Composite soil sample FTWC2 was collected from the staged soil at Buildings 137 and 141 and was analyzed for TPH-DRO. Composite soil sample FTWC3 was collected from the staged soil at Buildings 424 and 430 and was analyzed for TPH-DRO. The waste characterization data is included in **Appendix C**.

7.0 REFERENCES

ICF Kaiser Engineers, Inc., 1995 ICF Kaiser Quality Control Program for USACE Contracts.

New York State Department of Environmental Conservation. 1992 Sampling Guidelines and Protocols. Technological Background and Quality Control Quality Assurance for NYSDEC Spill Response Program.

New York State Department of Environmental Conservation. 1992 STARS Memo #1 Petroleum-Contaminated Soil Guidance Policy.

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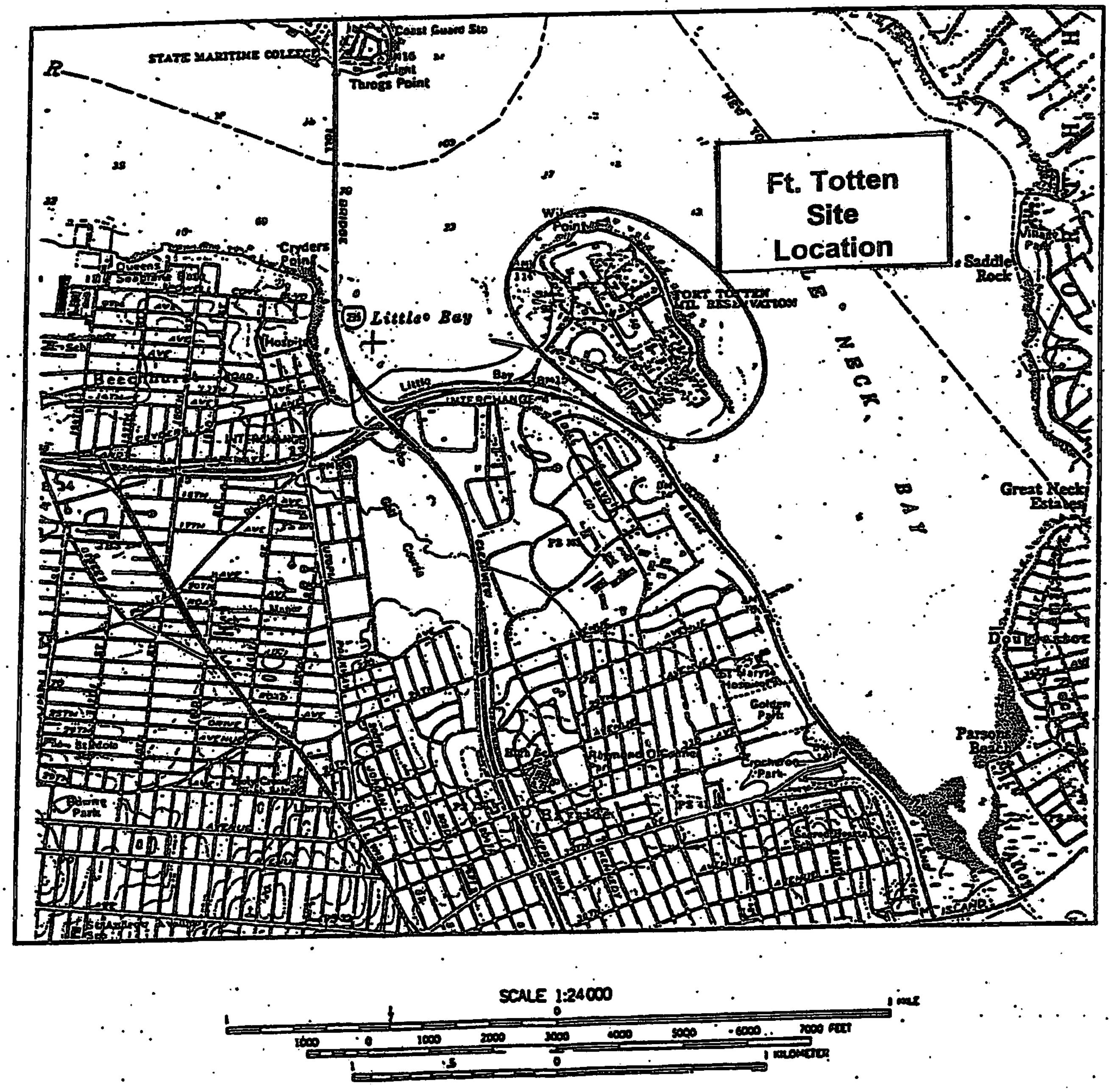
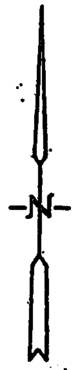
U.S. Army Corps of Engineers. 1996 U.S. Army Base Realignment and Closure 95 Program. Draft Environmental Baseline Survey Report, Fort Totten, New York. Prepared by Woodward-Clyde Federal Services.

U.S. Army Corps of Engineers. 1996 Fort Totten, Bellmore U.S. Army Maintenance Facility, Camp Kilmer, and Camp Pedricktown Site Health and Safety Plan. Prepared by ICF Kaiser Engineers, Inc.

FIGURES





the IT group
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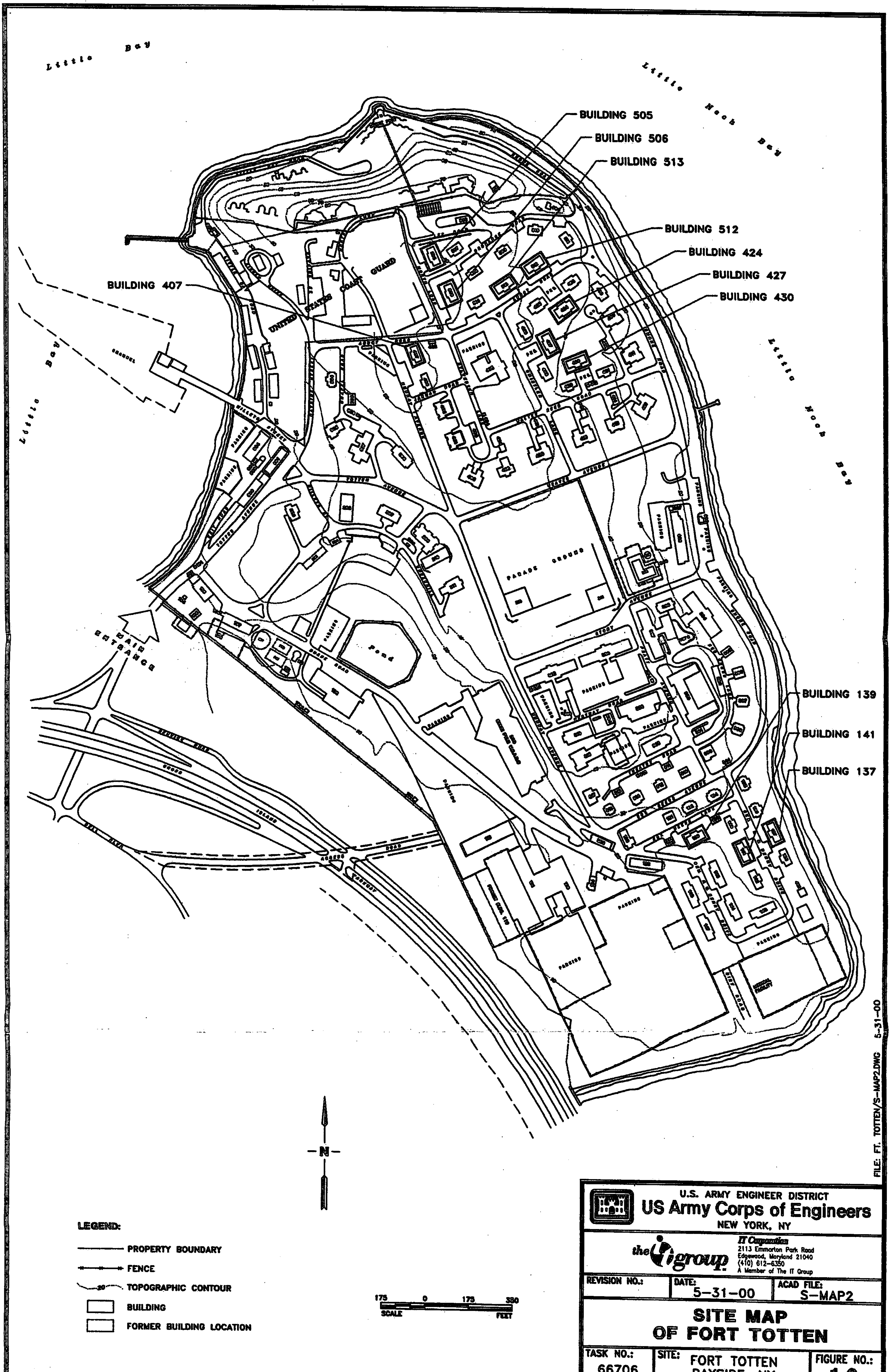
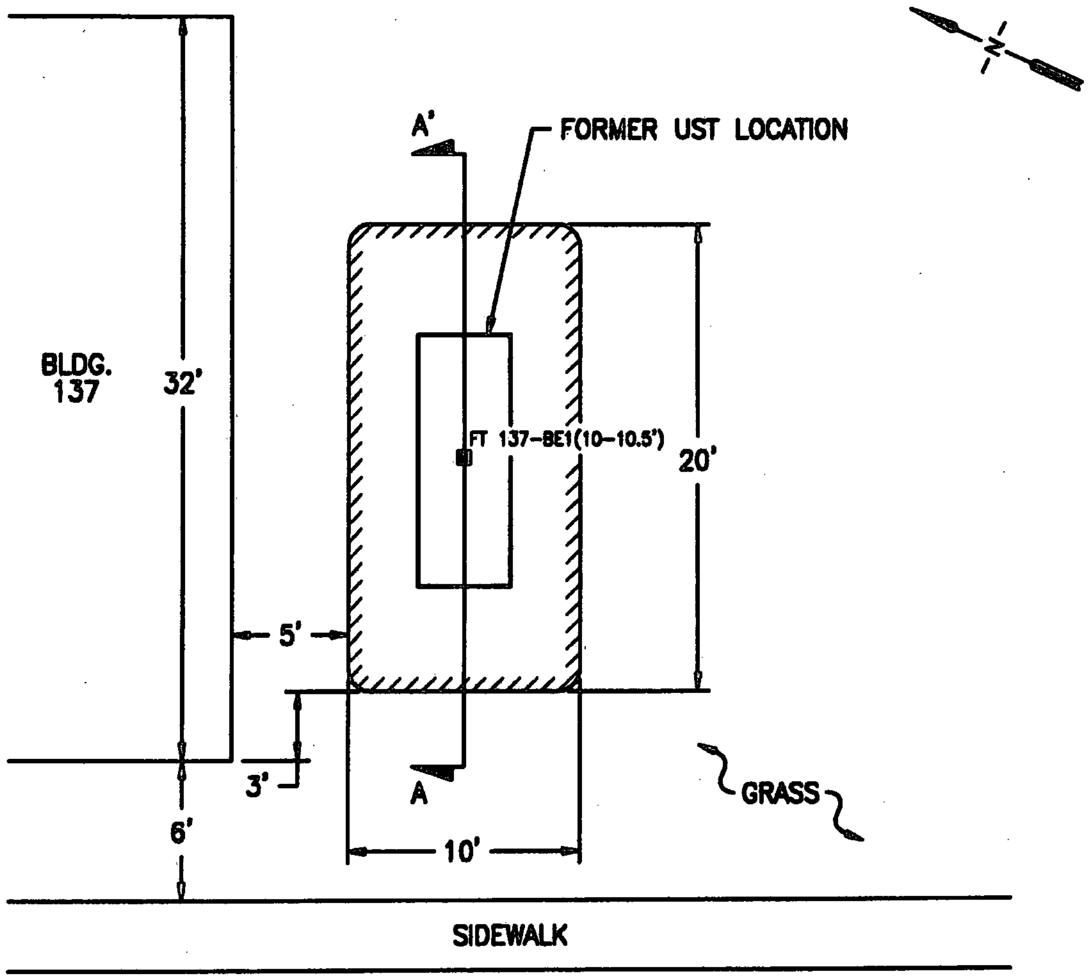
REVISION NO.:

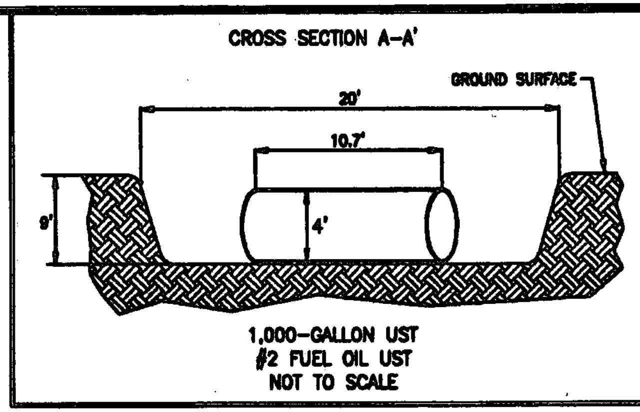
LOCATION MAP OF FORT TOTTEN

FIGURE NO.:
1-1



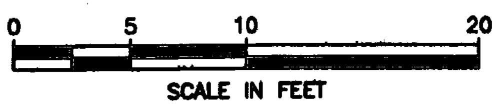
Little Bay
Little Neck Bay
Little Bay
Little Neck Bay
BUILDING 505
BUILDING 506
BUILDING 513
BUILDING 512
BUILDING 424
BUILDING 427
BUILDING 430
BUILDING 407
UNITED STATES COAST GUARD
PARADE GROUND
Pond
MAIN ENTRANCE
BUILDING 139
BUILDING 141
BUILDING 137
N
LEGEND:
PROPERTY BOUNDARY
FENCE
TOPOGRAPHIC CONTOUR
BUILDING
FORMER BUILDING LOCATION
175 0 175 350
SCALE FEET
FILE: FT. TOTTEN/S-MAP2.DWG 5-31-00
U.S. ARMY ENGINEER DISTRICT
US Army Corps of Engineers
NEW YORK, NY
the group
IT Corporation
2113 Emmorton Park Road
Edgewood, Maryland 21040
(410) 612-6350
A Member of The IT Group
REVISION NO.:
DATE: 5-31-00
ACAD FILE: S-MAP2
SITE MAP OF FORT TOTTEN
TASK NO.: 66706
SITE: FORT TOTTEN BAYSIDE, NY
FIGURE NO.: 1-2





LEGEND

- SOIL SAMPLE ID (DEPTH)
- EXTENT OF EXCAVATION
- SOIL



PLOTTED: 11-7-00

FILE: BLDG137.dwg

CONTRACT NO. DACA31-95-D-0083	FIGURE 5-1 FT. TOTTEN, NY
the IT group — IT Corporation 2113 Emmorton Park Road Edgewood, Maryland 21040 (410) 612-6350 A Member of The IT Group	BUILDING 137 UST EXCAVATION
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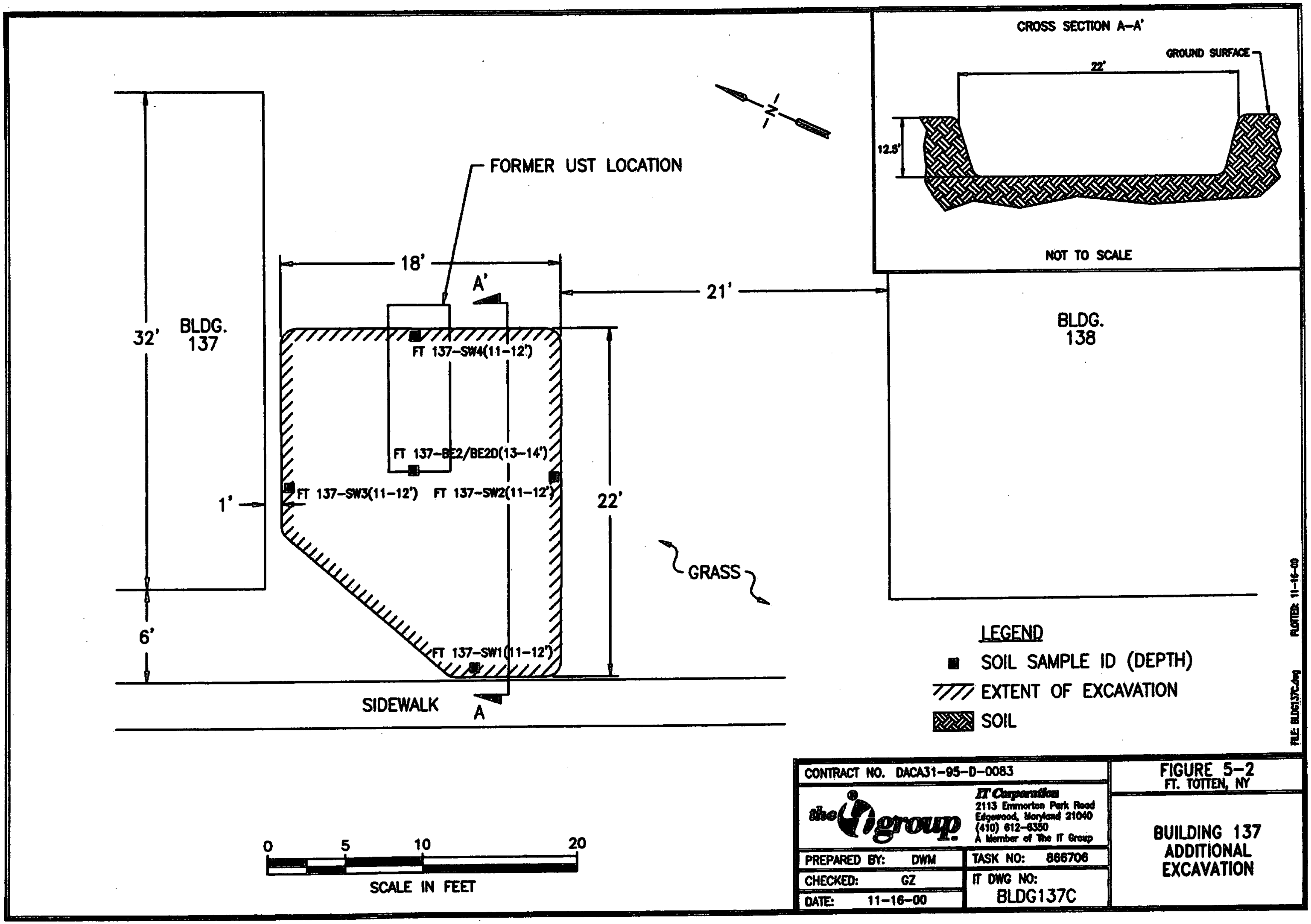
CHECKED: GZ / IT DWG NO: BLDG137	
DATE: 5-26-00	


CROSS SECTION A-A'
GROUND SURFACE
22'
12.5'
NOT TO SCALE
FORMER UST LOCATION
18'
21'
A'
A
32'
BLDG. 137
BLDG. 138
1'
6'
22'
FT 137-SW4(11-12')
FT 137-BE2/BE2D(13-14')
FT 137-SW3(11-12')
FT 137-SW2(11-12')
FT 137-SW1(11-12')
GRASS
SIDEWALK
N
LEGEND
SOIL SAMPLE ID (DEPTH)
EXTENT OF EXCAVATION
SOIL
0
5
10
20
SCALE IN FEET
PLOTTED: 11-16-00
FILE: BLDG137C.dwg
CONTRACT NO. DACA31-95-D-0083
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Edgewood, Maryland 21040
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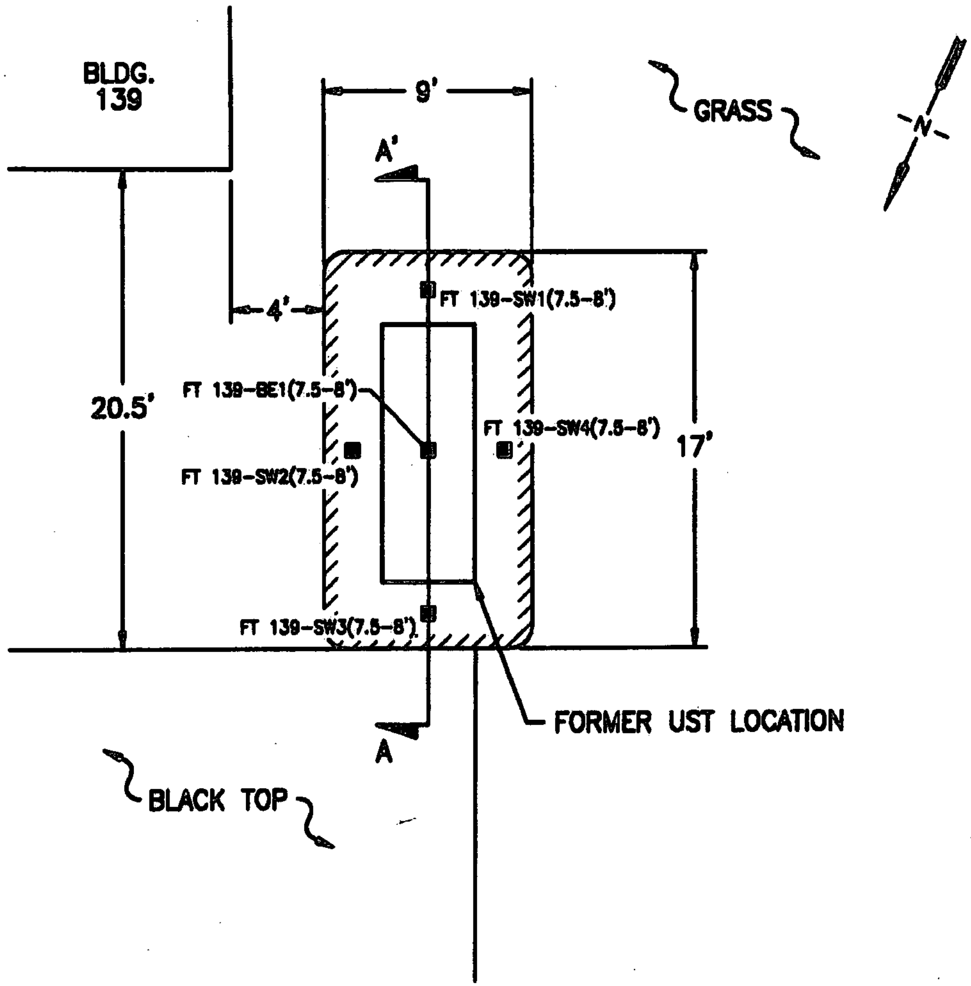
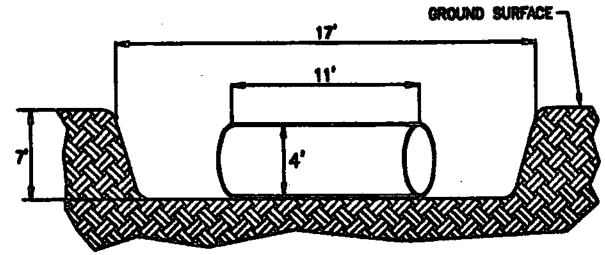
A Member of The IT Group
PREPARED BY: DWM
CHECKED: GZ
DATE: 11-16-00
TASK NO: 866706
IT DWG NO: BLDG137C
FIGURE 5-2
FT. TOTTEN, NY
BUILDING 137
ADDITIONAL
EXCAVATION



CROSS SECTION A-A'



1,000-GALLON UST
#2 FUEL OIL UST
NOT TO SCALE

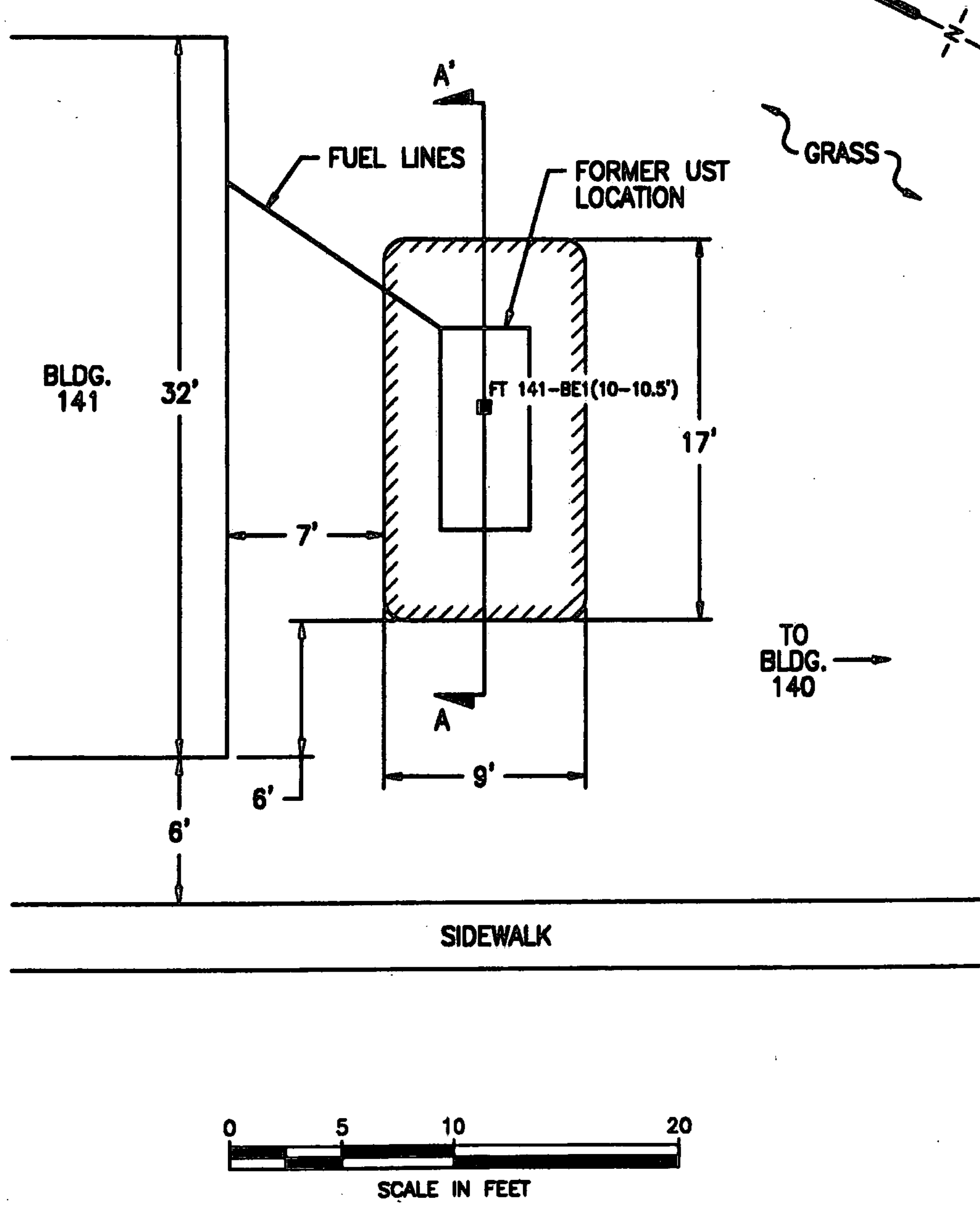
LEGEND

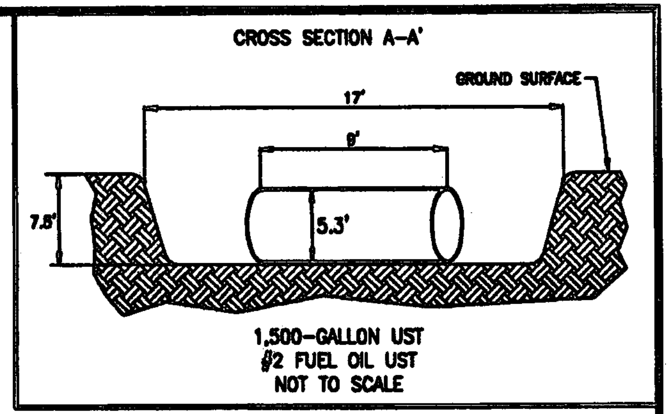
- SOIL SAMPLE ID (DEPTH)
- EXTENT OF EXCAVATION
- SOIL

0 5 10 20
SCALE IN FEET

PLOTTED: 11-6-00
FILE: BLDG139.dwg

CONTRACT NO. DACA31-95-D-0083		FIGURE 5-3 FT. TOTTEN, NY
the IT group	IT Corporation 2113 Emmorton Park Road Edgewood, Maryland 21040 (410) 612-6350 A Member of The IT Group	BUILDING 139 UST EXCAVATION
PREPARED BY: DWM	TASK NO: 866706	
CHECKED: GZ	IT DWG NO: BLDG139	
DATE: 11-6-00		





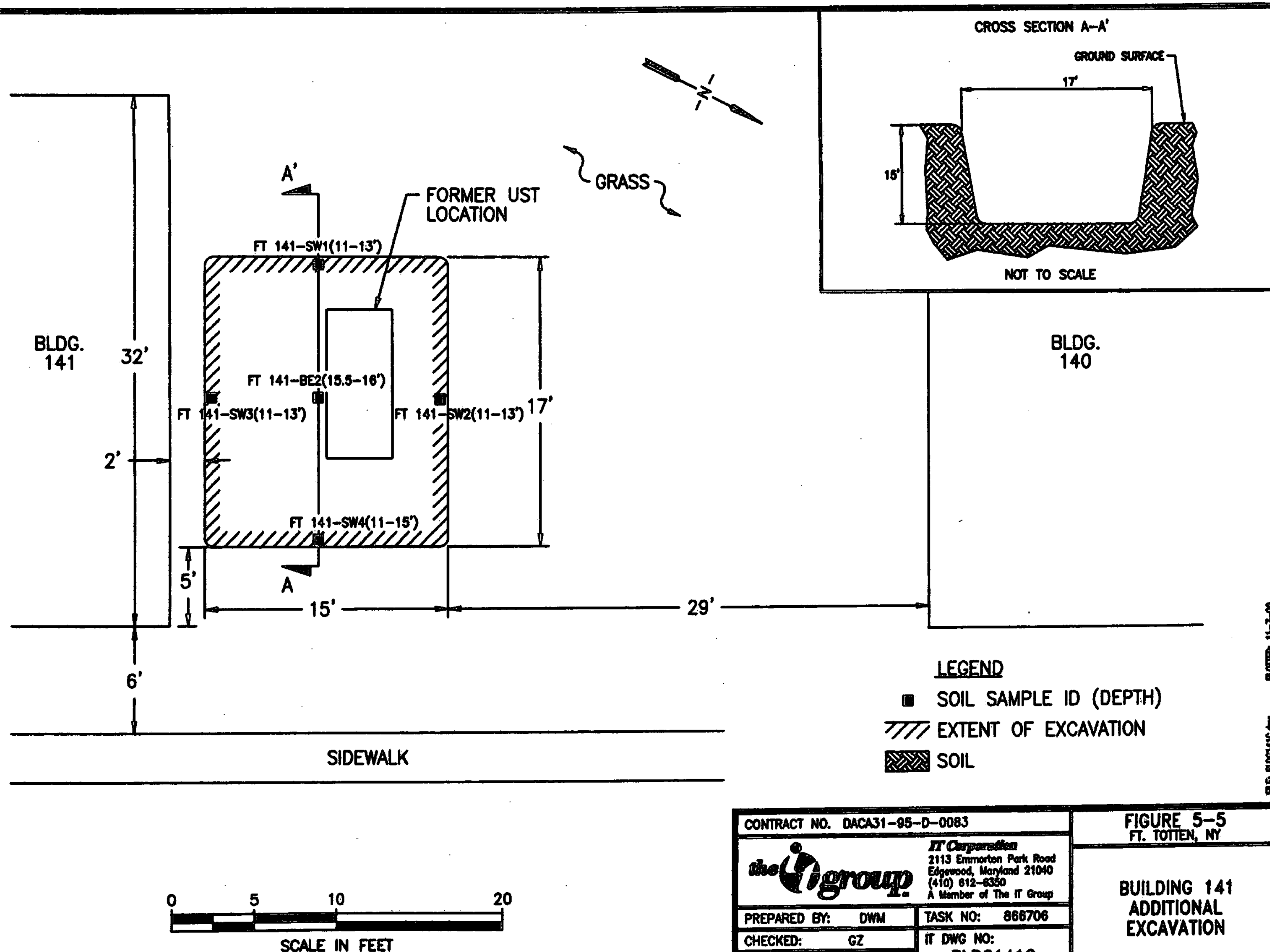
LEGEND

- SOIL SAMPLE ID (DEPTH)
- EXTENT OF EXCAVATION
- SOIL

CONTRACT NO. DACA31-95-D-0083	FIGURE 5-4 FT. TOTTEN, NY
the IT group — IT Corporation, 2113 Emmorton Park Road, Edgewood, Maryland 21040, (410) 612-6350, A Member of The IT Group	BUILDING 141 UST EXCAVATION
PREPARED BY: DWM — TASK NO: 866706	
CHECKED: GZ — IT DWG NO: BLDG141	
DATE: 11-6-00	

PLOTTED: 11-6-00

FILE: BLDG141.dwg



CONTRACT NO. DACA31-95-D-0083

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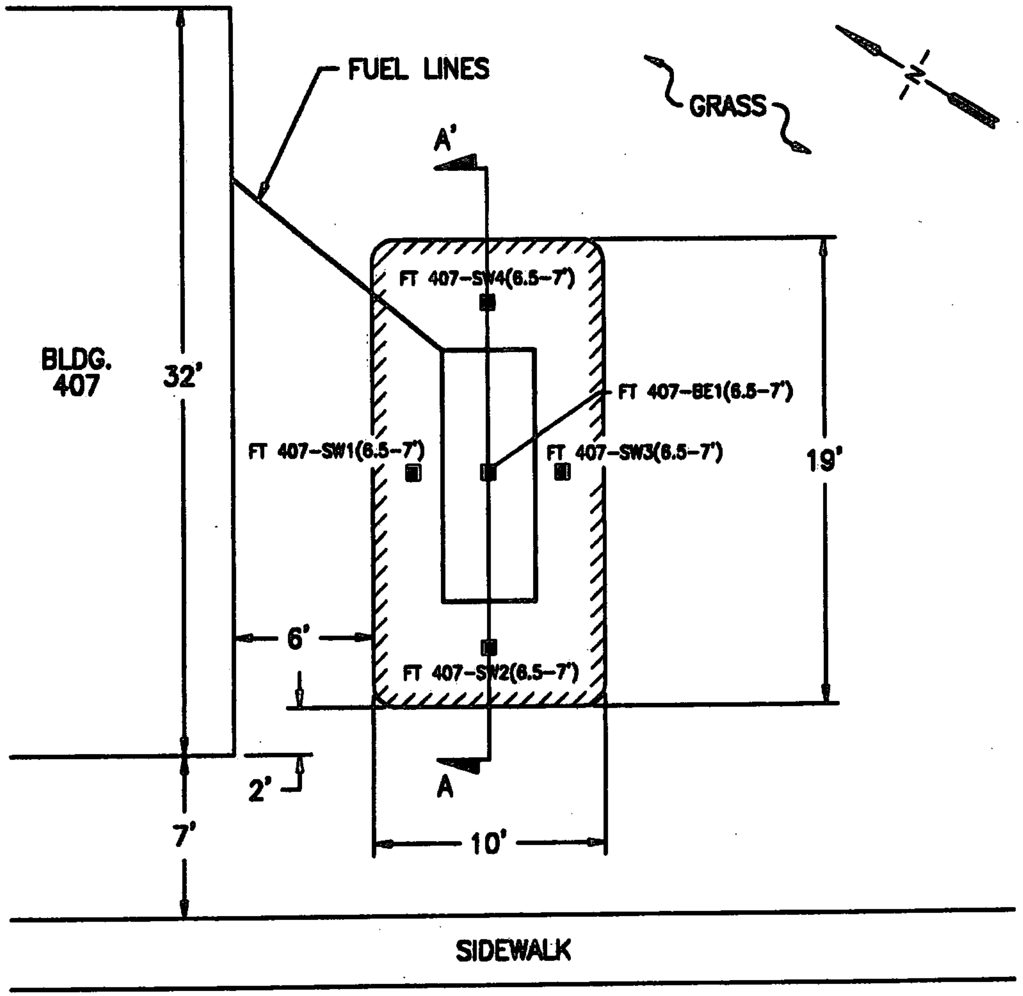
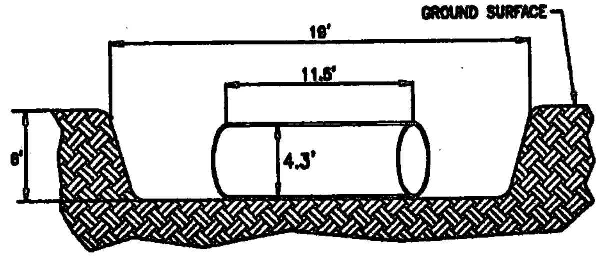
PREPARED BY: DWM	TASK NO: 866706
CHECKED: GZ	IT DWG NO: BLDG141C
DATE: 11-7-00	

FIGURE 5-5
FT. TOTTEN, NY

BUILDING 141
ADDITIONAL
EXCAVATION



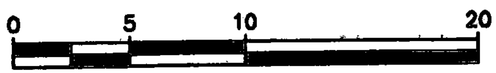


CROSS SECTION A-A'

1,000-GALLON UST
#2 FUEL OIL UST
NOT TO SCALE

LEGEND

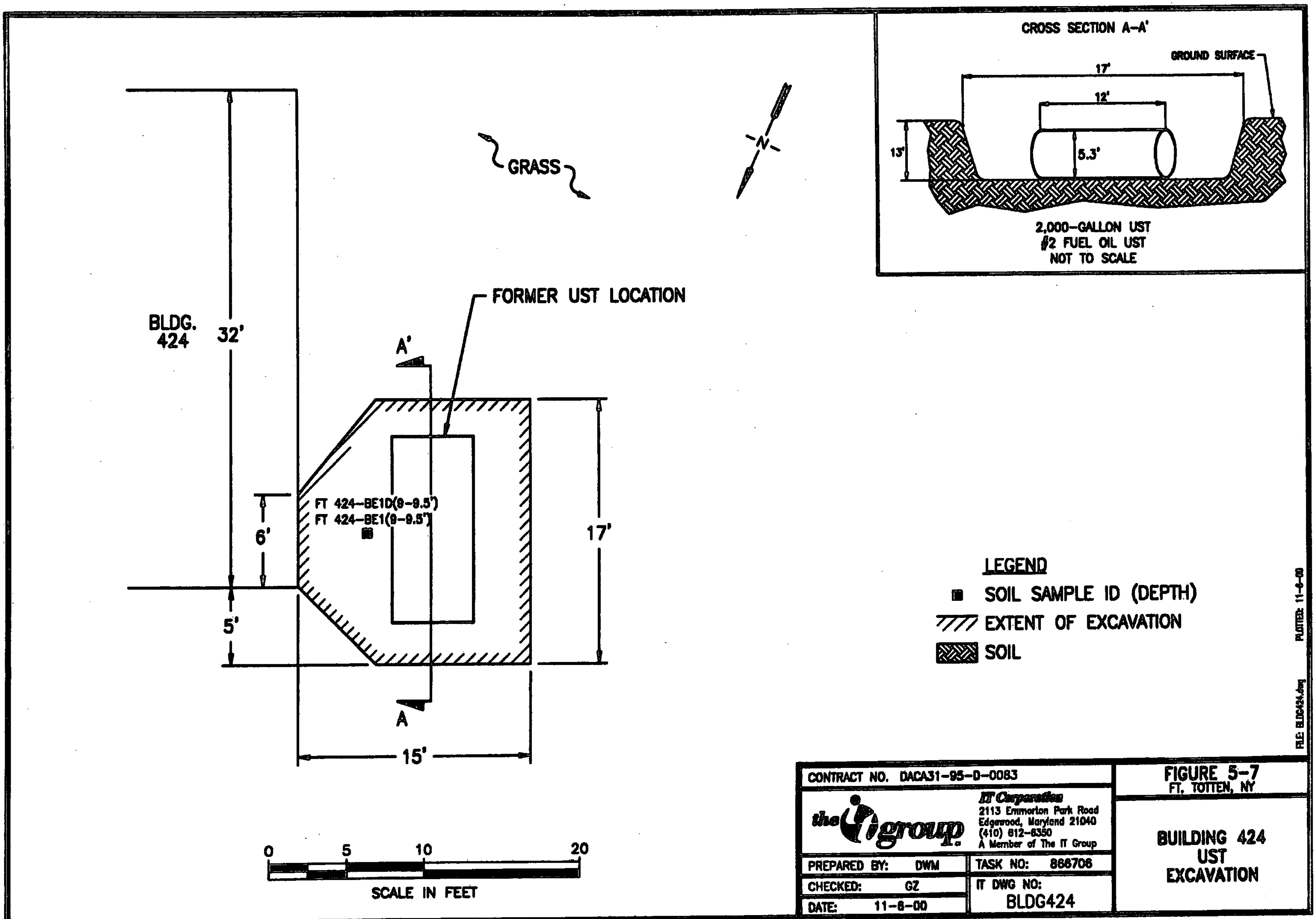
- SOIL SAMPLE ID (DEPTH)
- EXTENT OF EXCAVATION
- SOIL



SCALE IN FEET

FILE: BLDG407.dwg PLOTTED: 11-6-00

CONTRACT NO. DACA31-95-D-0083		FIGURE 5-6 FT. TOTTEN, NY
the IT group — IT Corporation 2113 Emmorton Park Road Edgewood, Maryland 21040 (410) 612-6350 A Member of The IT Group		BUILDING 407 UST EXCAVATION
PREPARED BY: DWM	TASK NO: 866706	
CHECKED: GZ	IT DWG NO: BLDG407	
DATE: 11-6-00		



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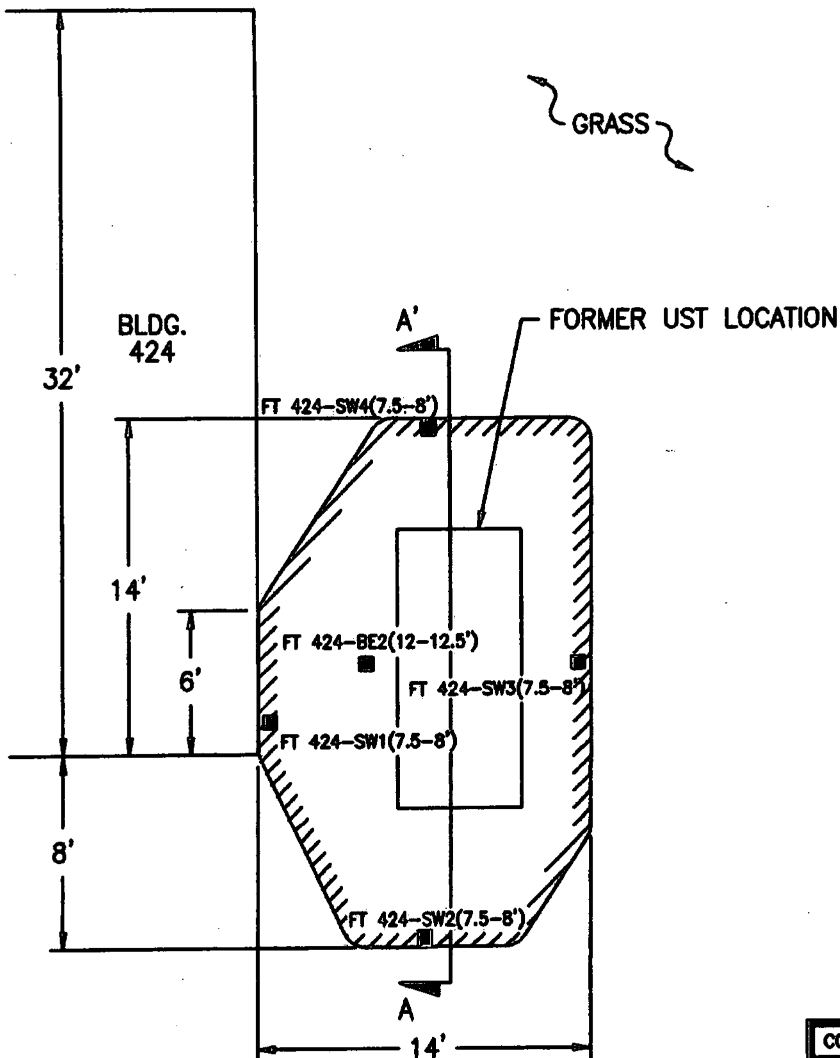
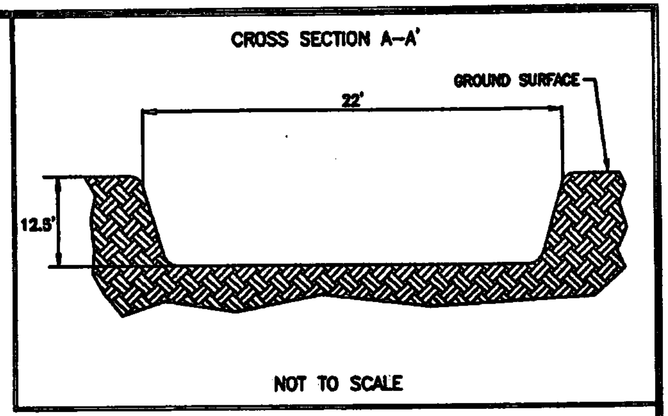
PREPARED BY: DWM
CHECKED: GZ
DATE: 11-6-00
TASK NO: 866706
IT DWG NO: BLDG424

FIGURE 5-7
FT. TOTTEN, NY

BUILDING 424
UST
EXCAVATION



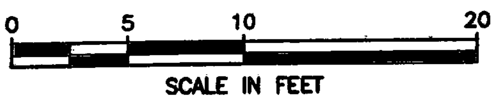


LEGEND

■ SOIL SAMPLE ID (DEPTH)

EXTENT OF EXCAVATION

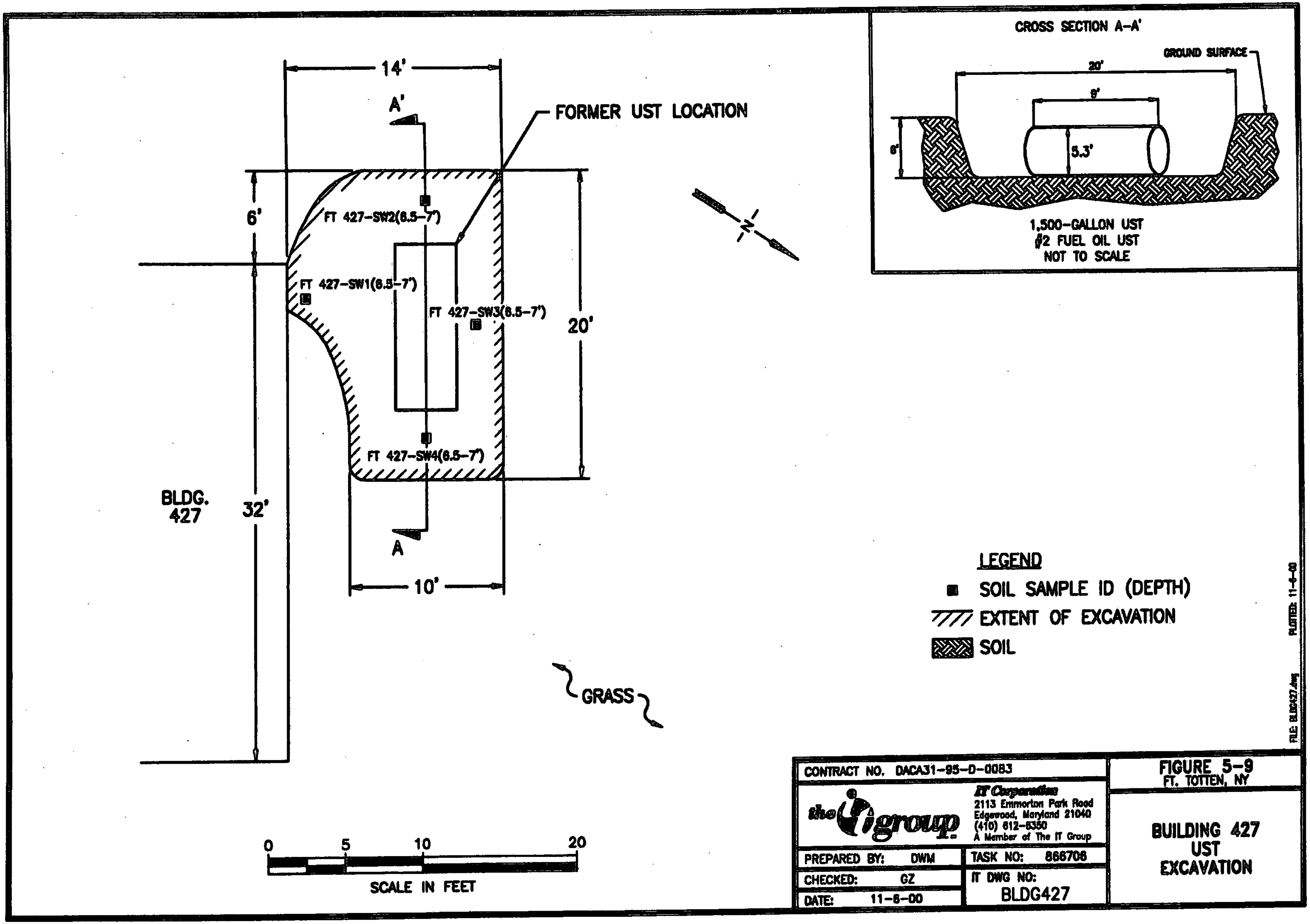
SOIL



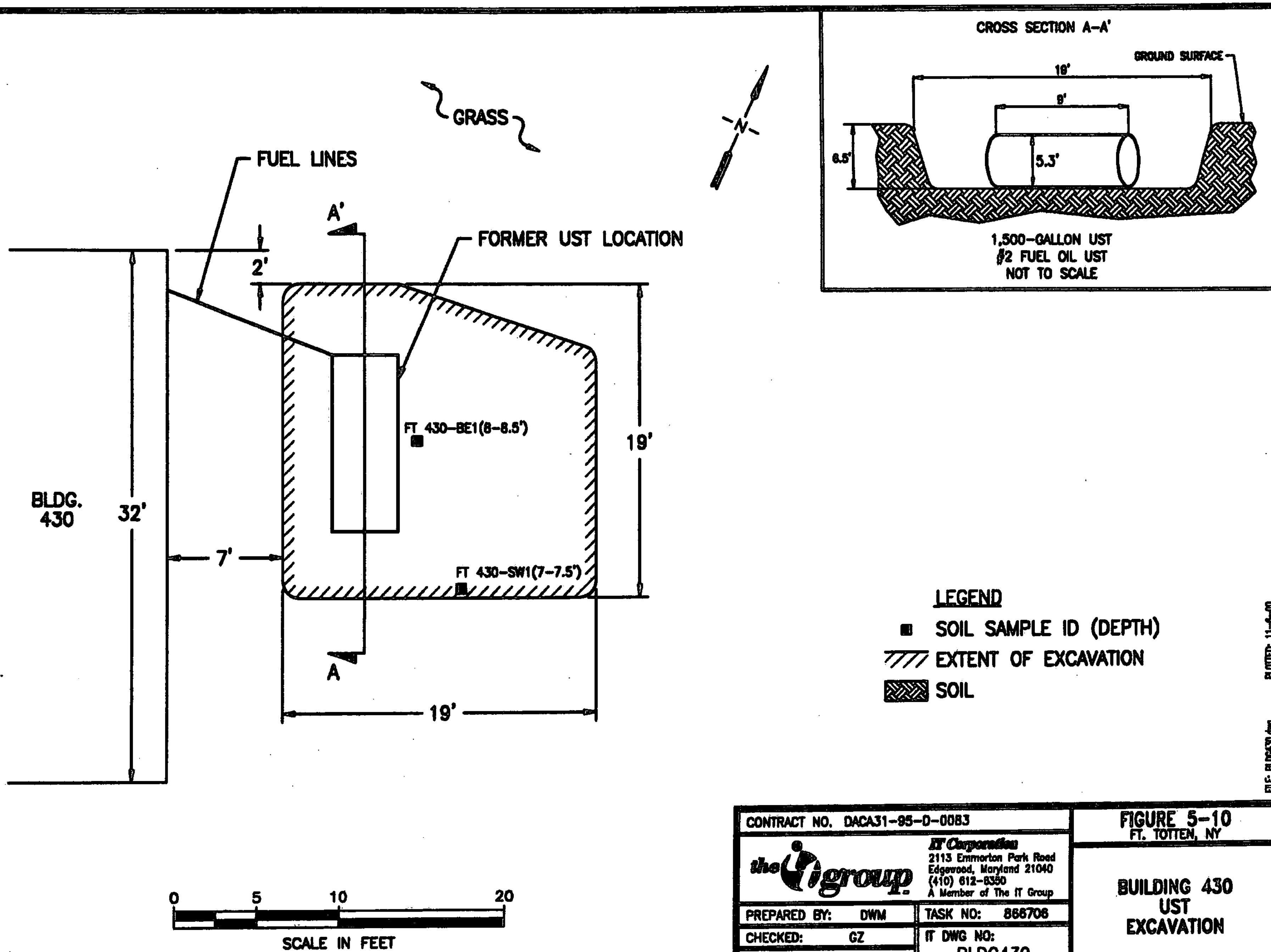
PLOTTED: 11-7-00

FILE: BLDG424C.dwg

CONTRACT NO. DACA31-95-D-0083	FIGURE 5-8 FT. TOTTEN, NY
the IT group — IT Corporation 2113 Emmorton Park Road Edgewood, Maryland 21040 (410) 612-6350 A Member of The IT Group	BUILDING 424 ADDITIONAL EXCAVATION
PREPARED BY: DWM / TASK NO: 886706	
CHECKED: GZ / IT DWG NO: BLDG424C	
DATE: 11-7-00	



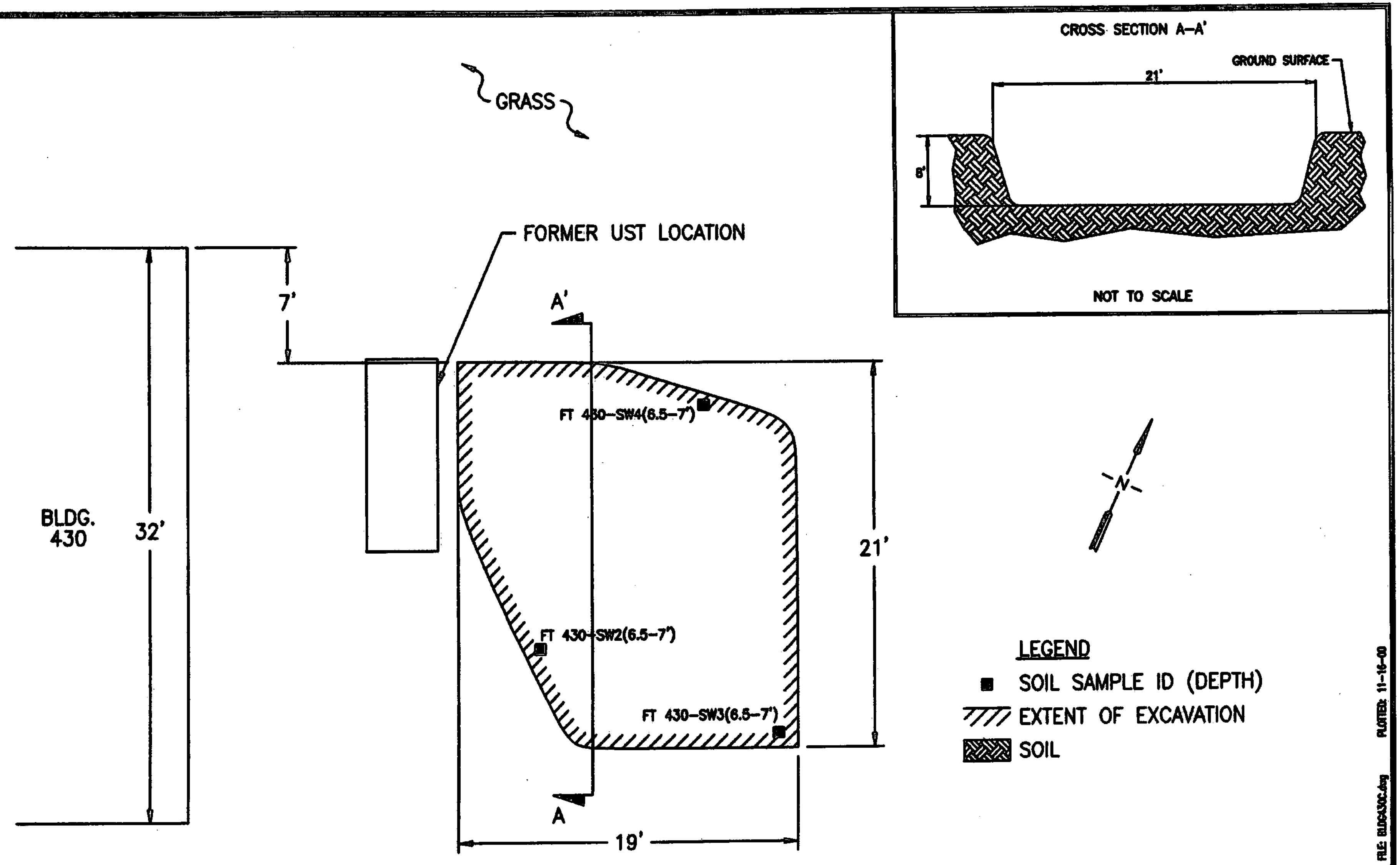
14'
A'
FORMER UST LOCATION
6'
FT 427-SW2(6.5-7')
FT 427-SW1(6.5-7')
FT 427-SW3(6.5-7')
20'
FT 427-SW4(6.5-7')
BLDG.
427
32'
A
10'
GRASS
CROSS SECTION A-A'
GROUND SURFACE
20'
8'
6'
5.3'
1,500-GALLON UST
#2 FUEL OIL UST
NOT TO SCALE
LEGEND
SOIL SAMPLE ID (DEPTH)
EXTENT OF EXCAVATION
SOIL
0
5
10
20
SCALE IN FEET
PLOTTED: 11-6-00
FILE: BLDG427.dwg
CONTRACT NO. DACA31-95-D-0083
the IT group
IT Corporation
2113 Emmorton Park Road
Edgewood, Maryland 21040
(410) 612-6350
A Member of The IT Group
PREPARED BY: DWM
CHECKED: GZ
DATE: 11-6-00
TASK NO: 866706
IT DWG NO: BLDG427
FIGURE 5-9
FT. TOTTEN, NY
BUILDING 427
UST
EXCAVATION



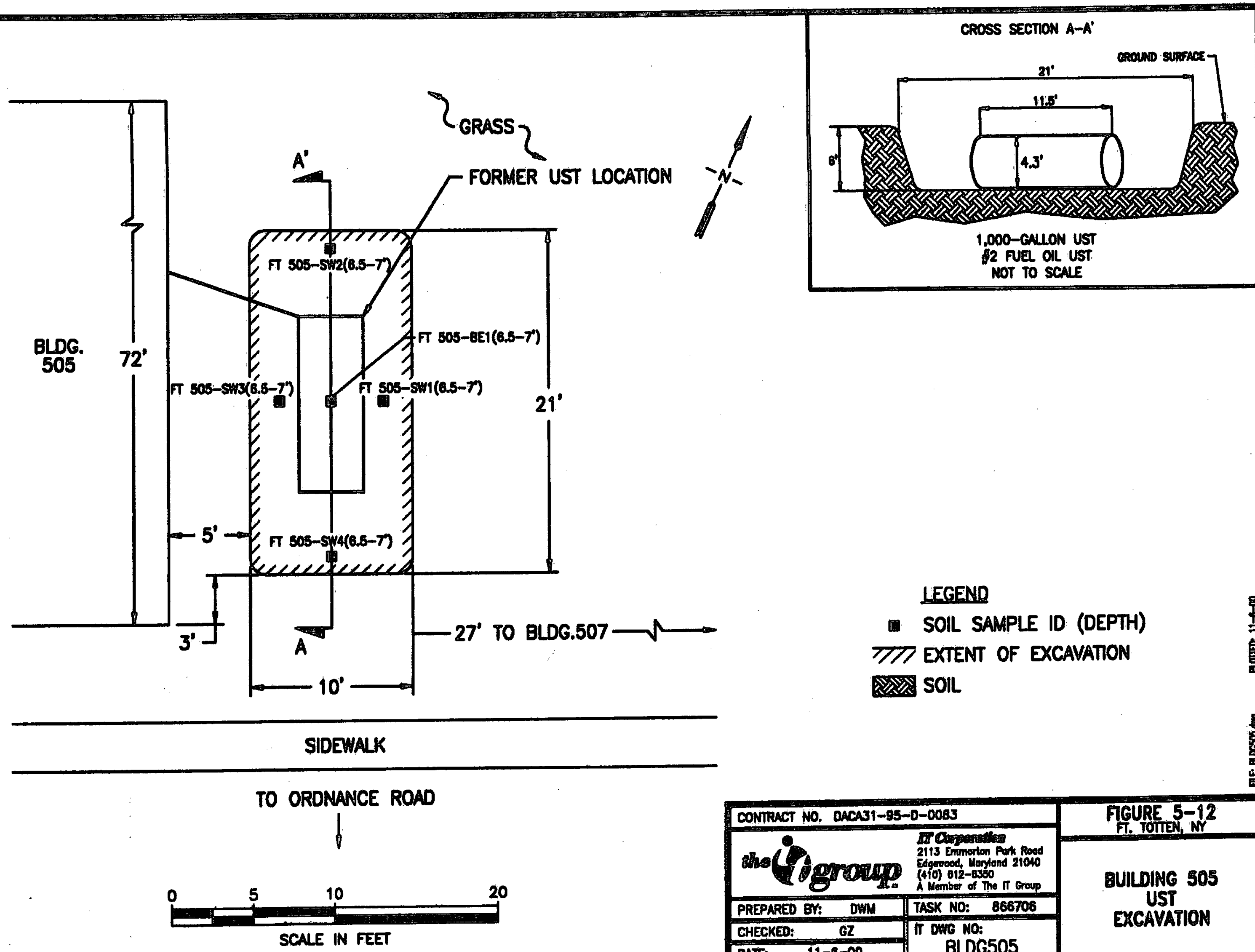
PLOTTED: 11-6-00

FILE: BLDG430.dwg

CONTRACT NO. DACA31-95-D-0083		FIGURE 5-10 FT. TOTTEN, NY
the i group	IT Corporation 2113 Emmorton Park Road Edgewood, Maryland 21040 (410) 612-6350 A Member of The IT Group	BUILDING 430 UST EXCAVATION
PREPARED BY: DWM	TASK NO: 866706	
CHECKED: GZ	IT DWG NO: BLDG430	
DATE: 11-6-00		



CONTRACT NO. DACA31-95-D-0083		FIGURE 5-11 FT. TOTTEN, NY
the IT group	IT Corporation 2113 Emmorton Park Road Edgewood, Maryland 21040 (410) 612-6350 A Member of The IT Group	BUILDING 430 ADDITIONAL EXCAVATION
PREPARED BY: DWM	TASK NO: 866706	
CHECKED: GZ	IT DWG NO: BLDG430C	
DATE: 11-16-00		



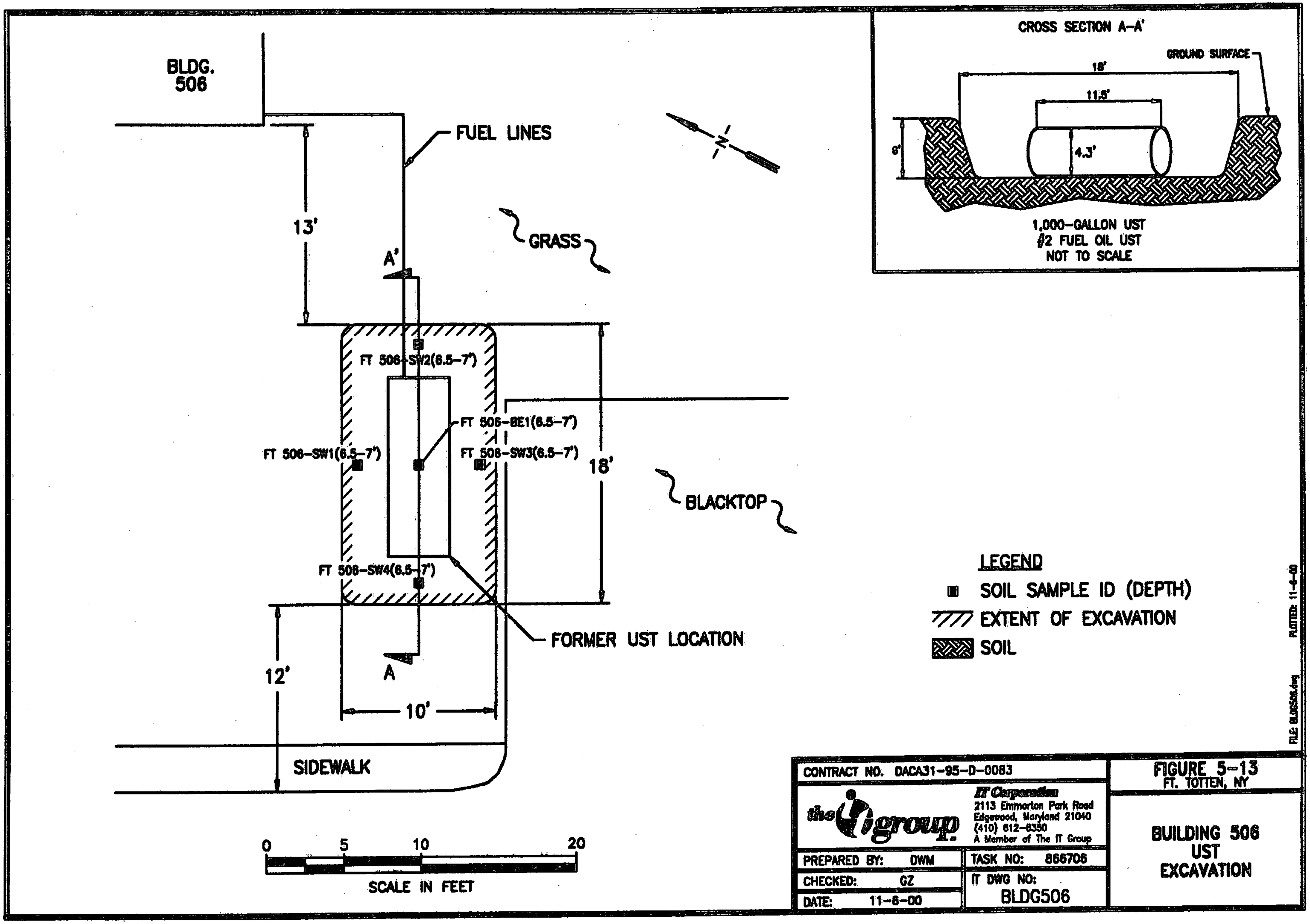
CONTRACT NO. DACA31-95-D-0083

the IT group
IT Corporation
2113 Emmorton Park Road
Edgewood, Maryland 21040
(410) 612-6350
A Member of The IT Group

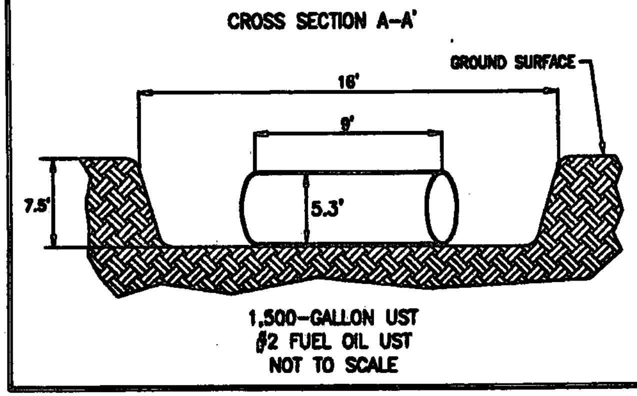
PREPARED BY: DWM
CHECKED: GZ
DATE: 11-6-00
TASK NO: 866706
IT DWG NO: BLDG505

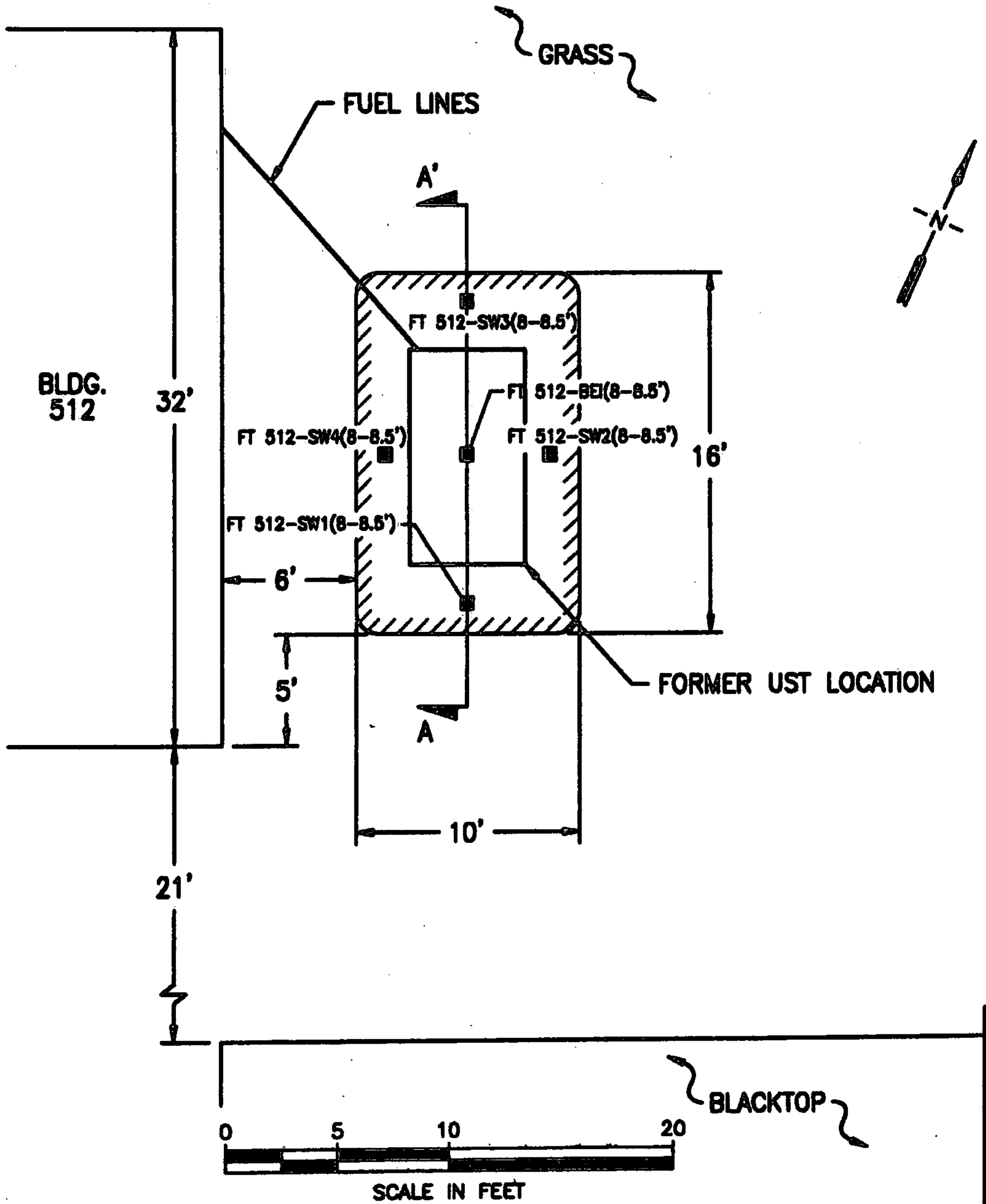
FIGURE 5-12
FT. TOTTEN, NY

BUILDING 505
UST
EXCAVATION



BLDG. 506
FUEL LINES
13'
GRASS
A'
FT 506-SW2(6.5-7')
FT 506-BE1(6.5-7')
FT 506-SW1(6.5-7')
FT 506-SW3(6.5-7')
18'
BLACKTOP
FT 506-SW4(6.5-7')
FORMER UST LOCATION
A
12'
10'
SIDEWALK
0 5 10 20
SCALE IN FEET
CROSS SECTION A-A'
GROUND SURFACE
18'
11.5'
6'
4.3'
1,000-GALLON UST
#2 FUEL OIL UST
NOT TO SCALE
LEGEND
SOIL SAMPLE ID (DEPTH)
EXTENT OF EXCAVATION
SOIL
PLOTTED: 11-6-00
FILE: BLDG506.dwg
CONTRACT NO. DACA31-95-D-0083
the IT group
IT Corporation
2113 Emmorton Park Road
Edgewood, Maryland 21040
(410) 612-6350
A Member of The IT Group
PREPARED BY: DWM
CHECKED: GZ
DATE: 11-6-00
TASK NO: 866706
IT DWG NO: BLDG506
FIGURE 5-13
FT. TOTTEN, NY
BUILDING 506
UST
EXCAVATION





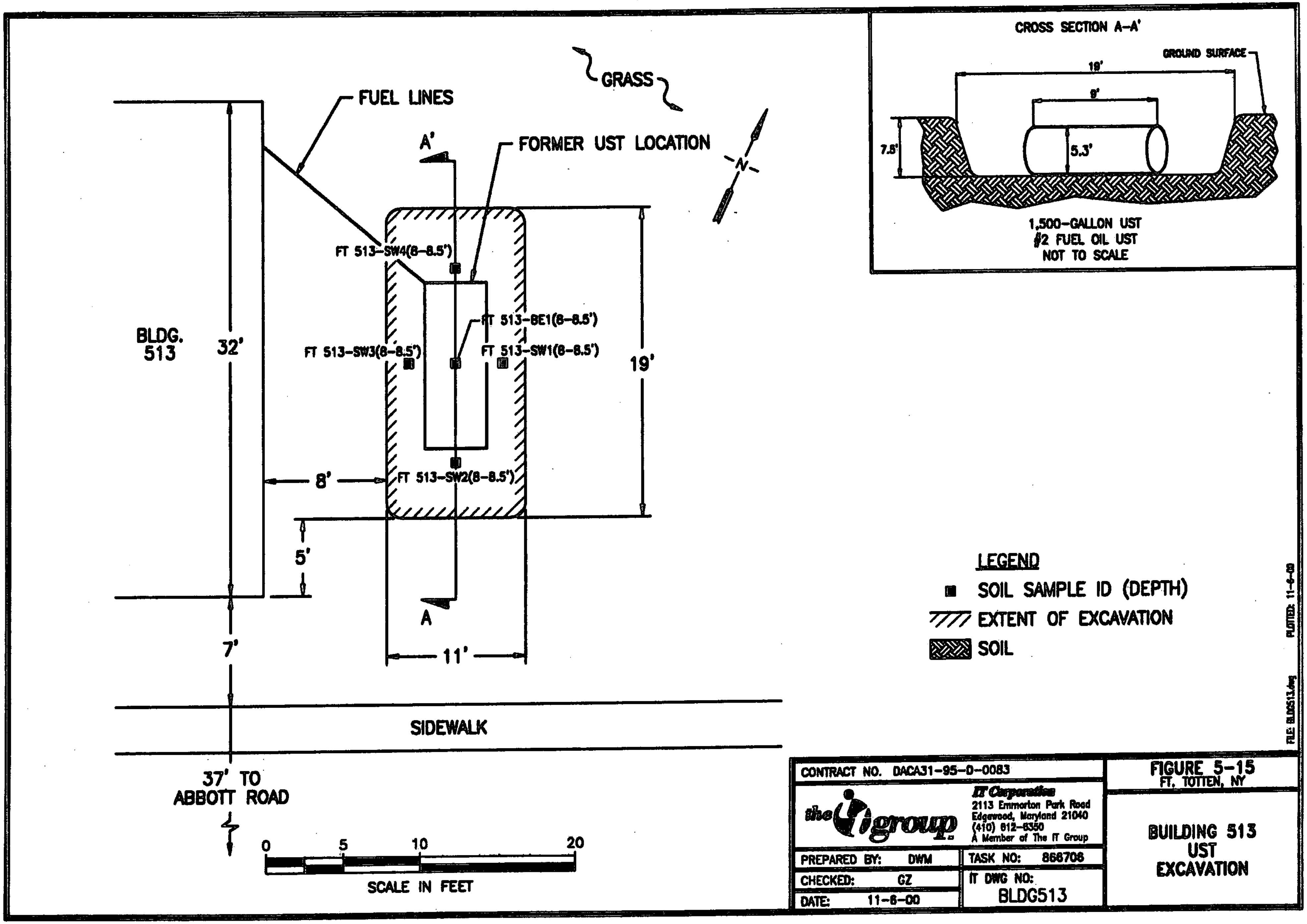
LEGEND

- ■ SOIL SAMPLE ID (DEPTH)
- ⁄⁄⁄⁄ EXTENT OF EXCAVATION
- SOIL

PLOTTED: 11-6-00

FILE: BLDG512.dwg

CONTRACT NO. DACA31-95-D-0083		FIGURE 5-14 FT. TOTTEN, NY
the IT group	IT Corporation 2113 Emmorton Park Road Edgewood, Maryland 21040 (410) 612-6350 A Member of The IT Group	BUILDING 512 UST EXCAVATION
PREPARED BY: DWM	TASK NO: 866706	
CHECKED: GZ	IT DWG NO: BLDG512	
DATE: 11-6-00		


CROSS SECTION A-A'
GROUND SURFACE
19'
9'
7.5'
5.3'
1,500-GALLON UST
#2 FUEL OIL UST
NOT TO SCALE
GRASS
FUEL LINES
FORMER UST LOCATION
N
A'
A
BLDG. 513
32'
19'
FT 513-SW4(8-8.5')
FT 513-BE1(8-8.5')
FT 513-SW3(8-8.5')
FT 513-SW1(8-8.5')
FT 513-SW2(8-8.5')
8'
5'
7'
11'
SIDEWALK
37' TO ABBOTT ROAD
0 5 10 20
SCALE IN FEET
LEGEND
SOIL SAMPLE ID (DEPTH)
EXTENT OF EXCAVATION
SOIL
PLOTTED: 11-6-00
FILE: BLDG513.dwg
CONTRACT NO. DACA31-95-D-0083
the IT group
IT Corporation
2113 Emmorton Park Road
Edgewood, Maryland 21040
(410) 612-6350
A Member of The IT Group
PREPARED BY: DWM
CHECKED: GZ
DATE: 11-6-00
TASK NO: 866706
IT DWG NO: BLDG513
FIGURE 5-15
FT. TOTTEN, NY
BUILDING 513
UST
EXCAVATION

TABLES

TABLE 3-1
FORT TOTTEN
DUPLICATE SAMPLES

Sample ID	Duplicate Sample ID	Date Sampled	Analyses
FT137BE2	FT137BE2D	9/13/00	VOCs, SVOCs
FT424-BE1	FT424-BE1D	12/7/99	VOCs, SVOCs
FT513-SW1	FT513-SW1D	12/2/99	VOCs, SVOCs

TABLE 5-1
FORT TOTTEN
SOIL SAMPLING PROGRAM

Sample ID	General Location of Soil Sample	Date	Sampling Method	Sampling Depth (ft bgs)	Analysis for Soil Sample
FT137-BE1	Building 137	12/6/99	Backhoe Bucket	10 - 10.5	VOCs, SVOCs
FT137-BE2	Building 137	9/13/00	Backhoe Bucket	13 - 14	VOCs, SVOCs
FT137-BE2D	Building 137	9/13/00	Backhoe Bucket	13 - 14	VOCs, SVOCs
FT137SW1	Building 137	9/13/00	Backhoe Bucket	11 - 12	VOCs, SVOCs
FT137SW2	Building 137	9/13/00	Backhoe Bucket	11 - 12	VOCs, SVOCs
FT137SW3	Building 137	9/13/00	Backhoe Bucket	11 - 12	VOCs, SVOCs
FT137SW4	Building 137	9/13/00	Backhoe Bucket	11 - 12	VOCs, SVOCs
FT139-SW1	Building 139	12/2/99	Backhoe Bucket	7.5 - 8	VOCs, SVOCs
FT139-SW2	Building 139	12/2/99	Backhoe Bucket	7.5 - 8	VOCs, SVOCs
FT139-SW3	Building 139	12/2/99	Backhoe Bucket	7.5 - 8	VOCs, SVOCs
FT139-SW4	Building 139	12/2/99	Backhoe Bucket	7.5 - 8	VOCs, SVOCs
FT139-BE1	Building 139	12/2/99	Backhoe Bucket	7.5 - 8	VOCs, SVOCs
FT141-BE1	Building 141	12/6/99	Backhoe Bucket	10 - 10.5	VOCs, SVOCs
FT141BE2	Building 141	9/14/00	Backhoe Bucket	15.5 - 16	VOCs, SVOCs
FT141-SW1	Building 141	9/14/00	Backhoe Bucket	11 - 13	VOCs, SVOCs
FT141-SW2	Building 141	9/14/00	Backhoe Bucket	11 - 13	VOCs, SVOCs
FT141-SW3	Building 141	9/14/00	Backhoe Bucket	11 - 13	VOCs, SVOCs
FT141-SW4	Building 141	9/14/00	Backhoe Bucket	11 - 15	VOCs, SVOCs
FT407-SW1	Building 407	12/2/99	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT407-SW2	Building 407	12/2/99	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT407-SW3	Building 407	12/2/99	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT407-SW4	Building 407	12/2/99	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT407-BE1	Building 407	12/2/99	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT424-BE1	Building 424	12/7/99	Backhoe Bucket	9 - 9.5	VOCs, SVOCs
FT424-BE1D	Building 424	12/7/99	Backhoe Bucket	9 - 9.5	VOCs, SVOCs
FT424BE2	Building 424	9/13/00	Backhoe Bucket	12 - 12.5	VOCs, SVOCs
FT424SW1	Building 424	9/13/00	Backhoe Bucket	7.5 - 8	VOCs, SVOCs
FT424SW2	Building 424	9/13/00	Backhoe Bucket	7.5 - 8	VOCs, SVOCs
FT424SW3	Building 424	9/13/00	Backhoe Bucket	7.5 - 8	VOCs, SVOCs
FT424SW4	Building 424	9/13/00	Backhoe Bucket	7.5 - 8	VOCs, SVOCs
FT427-SW1	Building 427	12/7/99	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT427-SW2	Building 427	12/7/99	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT427-SW3	Building 427	12/7/99	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT427-SW4	Building 427	12/7/99	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT430-BE1	Building 430	12/7/99	Backhoe Bucket	8 - 8.5	VOCs, SVOCs
FT430-SW1	Building 430	12/7/99	Backhoe Bucket	7 - 7.5	VOCs, SVOCs
FT430SW2	Building 430	9/12/00	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT430SW3	Building 430	9/12/00	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT430SW4	Building 430	9/12/00	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT505-SW1	Building 505	12/2/99	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT505-SW2	Building 505	12/2/99	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT505-SW3	Building 505	12/2/99	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT505-SW4	Building 505	12/2/99	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT505-BE1	Building 505	12/2/99	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT506-SW1	Building 506	12/1/99	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT506-SW2	Building 506	12/1/99	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT506-SW3	Building 506	12/1/99	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT506-SW4	Building 506	12/1/99	Backhoe Bucket	6.5 - 7	VOCs, SVOCs
FT506-BE1	Building 506	12/1/99	Backhoe Bucket	6.5 - 7	VOCs, SVOCs

TABLE 5-1
FORT TOTTEN
SOIL SAMPLING PROGRAM

Sample ID	General Location of Soil Sample	Date	Sampling Method	Sampling Depth (ft bgs)	Analysis for Soil Sample
FT512-SW1	Building 512	12/2/99	Backhoe Bucket	8 - 8.5	VOCs, SVOCs
FT512-SW2	Building 512	12/2/99	Backhoe Bucket	8 - 8.5	VOCs, SVOCs
FT512-SW3	Building 512	12/2/99	Backhoe Bucket	8 - 8.5	VOCs, SVOCs
FT512-SW4	Building 512	12/2/99	Backhoe Bucket	8 - 8.5	VOCs, SVOCs
FT512-BE1	Building 512	12/2/99	Backhoe Bucket	8 - 8.5	VOCs, SVOCs
FT513-SW1	Building 513	12/2/99	Backhoe Bucket	8 - 8.5	VOCs, SVOCs
FT513-SW1D	Building 513	12/2/99	Backhoe Bucket	8 - 8.5	VOCs, SVOCs
FT513-SW2	Building 513	12/2/99	Backhoe Bucket	8 - 8.5	VOCs, SVOCs
FT513-SW3	Building 513	12/2/99	Backhoe Bucket	8 - 8.5	VOCs, SVOCs
FT513-SW4	Building 513	12/2/99	Backhoe Bucket	8 - 8.5	VOCs, SVOCs
FT513-BE1	Building 513	12/2/99	Backhoe Bucket	8 - 8.5	VOCs, SVOCs
FT-WC	Soil from Bld. 137, 424,427,and 430	12/8/99	Hand Auger	NA	Waste Characterization Parameters[1]
FTWC1	Soil from Bld. 137, 141, 424, and 430	9/15/00	Spoon	NA	Waste Characterization Parameters[2]
FTWC2	Soil from Bld. 137 and 141	9/15/00	Spoon	NA	TPH-DRO
FTWC3	Soil from Bld. 424 and 430	9/15/00	Spoon	NA	TPH-DRO

1. Analyses include cyanide, RCRA Characteristics, % solids, paint filter, diesel range organics, Full TCLP, VOCs, SVOCs, Pesticides/PCBs, Herbicides, and TOX.
2. Analyses include Full TCLP, TCL PCBs, pH, Ignitability, Reactivity.

TABLE 5-2
FORT TOTTEN
SOIL ANALYTICAL DATA

		Building 137							Building 139	
Field Sample ID:	NYSDEC STARS Memo #1 TCLP AGV (ppb)	FT137-BE1	FT137SW1	FT137SW2	FT137SW3	FT137SW4	FT137BE2	FT137BE2D	FT139-BE1	FT139-SW1
Depth (ft bgs):		10-10.5	11-12	11-12	11-12	11-12	13-14	13-14	7.5-8	7.5-8
Sampling Date:		12/06/99	9/13/00	9/13/00	9/13/00	9/13/00	9/13/00	9/13/00	12/02/99	12/02/99
Analyte										
VOCs (ppb)										
methyl-tert-butylether	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND
benzene	14	ND	ND	ND	ND	ND	ND	ND	ND	ND
toluene	100	273	ND	ND	ND	ND	ND	ND	ND	2
ethylbenzene	100	1,970	ND	ND	ND	ND	ND	ND	ND	ND
m,p-xylene	100	21,600	ND	ND	ND	ND	ND	ND	ND	ND
o-xylene	100	12,000	ND	ND	ND	ND	ND	ND	ND	ND
isopropylbenzene	100	2,350	ND	ND	ND	ND	29	ND	ND	ND
n-propylbenzene	100	2,810	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-trimethylbenzene	100	23,500	ND	ND	ND	420	ND	ND	ND	ND
tert-butylbenzene	100	694	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trimethylbenzene	100	60,600	ND	ND	ND	640	ND	ND	ND	ND
sec-butylbenzene	100	7,220	ND	ND	ND	14,000	ND	ND	ND	ND
p-isopropyltoluene	100	5,820	ND	ND	ND	6,300	280	370	ND	ND
n-butylbenzene	100	ND	ND	ND	ND	9,700	ND	ND	ND	ND
naphthalene	200	82,200	ND	ND	ND	4,800	ND	ND	2	ND
SVOCs (ppb)										
anthracene	1,000	2,810 J	ND	210 J	1,100 J	1,100 J	460 J	1,200 J	ND	ND
fluorene	1,000	13,900	ND	53 J	4,500	11,000	5,900	17,000	ND	ND
phenanthrene	1,000	20,400	120 J	780	8,200	21,000	9,300	30,000	ND	142 J
pyrene	1,000	3,060 J	150 J	1,500	3,300	3,100 J	2,000	4,500 J	ND	138 J
acenaphthene	400	3,810 J	ND	ND	3,600	4,000	3,300	11,000	ND	ND
benzo[a]anthracene	0.04	ND	92 J	940	1,300 J	ND	290 J	520 J	ND	ND
fluoranthene	1,000	ND	83 J	1,400	2,600	710 J	740 J	1,500 J	ND	139 J
benzo[b]fluoranthene	0.04	ND	89 J	1,200	1,400	ND	390 J	ND	ND	ND
benzo[k]fluoranthene	0.04	ND	ND	990	1,200 J	ND	200 J	ND	ND	ND
benzo[a]pyrene	0.04	ND	180 J	1,100	1,400	ND	290 J	480 J	ND	ND
dibenzo[a,h]anthracene	1,000	ND	ND	230 J	280 J	ND	ND	ND	ND	ND
benzo[g,h,i]perylene	0.04	ND	130 J	830	850 J	ND	150 J	ND	ND	ND
indeno[1,2,3-cd]pyrene	0.04	ND	ND	880	890 J	ND	ND	ND	ND	ND
chrysene	0.04	ND	230 J	1,400	1,700	650 J	550 J	1,100 J	ND	78 J

TABLE 5-2
FORT TOTTEN
SOIL ANALYTICAL DATA

		Building 139			Building 141				
Field Sample ID:	NYSDEC STARS Memo #1 TCLP AGV (ppb)	FT139-SW2	FT139-SW3	FT139-SW4	FT141-BE1	FT141BE2	FT141SW1	FT141SW2	FT141SW3
Depth (ft bgs):		7.5-8	7.5-8	7.5-8	10-10.5	15.5-16	11-13	11-13	11-13
Sampling Date:		12/02/99	12/02/99	12/02/99	12/06/99	9/14/00	9/14/00	9/14/00	9/14/00
Analyte									
VOCs (ppb)									
methyl-tert-butylether	1,000	ND	ND	ND	ND	ND	ND	ND	ND
benzene	14	ND	ND	ND	ND	ND	ND	ND	ND
toluene	100	2	10	4	22 B	ND	ND	ND	ND
ethylbenzene	100	ND	ND	ND	38	ND	ND	ND	ND
m,p-xylene	100	1	ND	ND	80	ND	ND	ND	ND
o-xylene	100	ND	ND	ND	47	ND	ND	ND	ND
isopropylbenzene	100	ND	ND	ND	159	ND	ND	ND	ND
n-propylbenzene	100	ND	ND	ND	356	1,800	ND	1,300	2,300
1,3,5-trimethylbenzene	100	ND	ND	ND	61	ND	ND	ND	ND
tert-butylbenzene	100	ND	ND	ND	76	ND	ND	ND	ND
1,2,4-trimethylbenzene	100	ND	ND	ND	168	1,700	ND	ND	ND
sec-butylbenzene	100	ND	ND	ND	456	1,600	ND	1,500	3,100
p-isopropyltoluene	100	ND	ND	ND	95	490	ND	ND	ND
n-butylbenzene	100	ND	ND	ND	844	2,000	700	2,100	3,600
naphthalene	200	5	2	2	300 B	14,000	6,200	15,000	ND
SVOCs (ppb)									
anthracene	1,000	292 J	ND	ND	1,550 J	650 J	1,400 J	78 J	1,300 J
fluorene	1,000	135 J	ND	ND	13,500	3,800	10,000	580	8,500
phenanthrene	1,000	1,010	233 J	ND	16,600	7,800	16,000	1,100	17,000
pyrene	1,000	602	214 J	ND	ND	950 J	2,200 J	62 J	1,400 J
acenaphthene	400	148 J	ND	ND	5,670 J	2,000	6,600	490	3,800
benzo[a]anthracene	0.04	291 J	118 J	ND	ND	270 J	620 J	ND	390 J
fluoranthene	1,000	806	280 J	ND	ND	990 J	1,800 J	64 J	1,400 J
benzo[b]fluoranthene	0.04	152 J	91 J	ND	ND	220 J	530 J	ND	ND
benzo[k]fluoranthene	0.04	230 J	104 J	ND	ND	190 J	500 J	ND	ND
benzo[a]pyrene	0.04	223 J	113 J	ND	ND	200 J	550 J	ND	ND
dibenzo[a,h]anthracene	1,000	ND	ND	ND	ND	ND	ND	ND	ND
benzo[g,h,i]perylene	0.04	89 J	ND	ND	ND	ND	270 J	ND	ND
indeno[1,2,3-cd]pyrene	0.04	98 J	ND	ND	ND	ND	270 J	ND	ND
chrysene	0.04	286 J	123 J	ND	ND	320 J	770 J	ND	380 J

TABLE 5-2
FORT TOTTEN
SOIL ANALYTICAL DATA

		Building 141	Building 407					Building 424	
Field Sample ID:	NYSDEC STARS Memo #1 TCLP AGV (ppb)	FT141SW4	FT407-BE1	FT407-SW1	FT407-SW2	FT407-SW3	FT407-SW4	FT424-BE1	FT424-BE1D
Depth (ft bgs):		11-15	6.5-7	6.5-7	6.5-7	6.5-7	6.5-7	9-9.5	9-9.5
Sampling Date:		9/14/00	12/02/99	12/02/99	12/02/99	12/02/99	12/02/99	12/07/99	12/07/99
Analyte									
VOCs (ppb)									
methyl-tert-butylether	1,000	ND	ND	ND	ND	ND	ND	ND	ND
benzene	14	ND	ND	ND	ND	ND	ND	ND	ND
toluene	100	ND	2	ND	ND	ND	ND	9 B	11 B
ethylbenzene	100	ND	ND	ND	ND	ND	ND	8	9
m,p-xylene	100	ND	ND	ND	ND	ND	ND	25	6
o-xylene	100	ND	ND	ND	ND	ND	ND	3	3
isopropylbenzene	100	ND	ND	ND	ND	ND	ND	19	38
n-propylbenzene	100	ND	ND	ND	ND	ND	ND	24	43
1,3,5-trimethylbenzene	100	ND	ND	ND	ND	ND	ND	26	13
tert-butylbenzene	100	ND	ND	ND	ND	ND	ND	5	14
1,2,4-trimethylbenzene	100	ND	ND	ND	ND	ND	ND	85	9
sec-butylbenzene	100	ND	ND	ND	ND	ND	ND	131	217
p-isopropyltoluene	100	ND	ND	ND	ND	ND	ND	7	8
n-butylbenzene	100	ND	ND	ND	ND	ND	ND	127	181
naphthalene	200	ND	ND	ND	ND	1	2	274 B	277 B
SVOCs (ppb)									
anthracene	1,000	ND	ND	ND	ND	ND	ND	ND	ND
fluorene	1,000	ND	ND	ND	ND	ND	ND	733	455
phenanthrene	1,000	ND	ND	ND	ND	ND	ND	1,530	912
pyrene	1,000	ND	ND	ND	ND	ND	ND	187 J	114 J
acenaphthene	400	ND	ND	ND	ND	ND	ND	216 J	132 J
benzo[a]anthracene	0.04	ND	ND	ND	ND	ND	ND	ND	ND
fluoranthene	1,000	ND	ND	ND	ND	ND	ND	ND	ND
benzo[b]fluoranthene	0.04	ND	ND	ND	ND	ND	ND	ND	ND
benzo[k]fluoranthene	0.04	ND	ND	ND	ND	ND	ND	ND	ND
benzo[a]pyrene	0.04	ND	ND	ND	ND	ND	ND	ND	ND
dibenzo[a,h]anthracene	1,000	ND	ND	ND	ND	ND	ND	ND	ND
benzo[g,h,i]perylene	0.04	ND	ND	ND	ND	ND	ND	ND	ND
indeno[1,2,3-cd]pyrene	0.04	ND	ND	ND	ND	ND	ND	ND	ND
chrysene	0.04	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 5-2
FORT TOTTEN
SOIL ANALYTICAL DATA

		Building 424					Building 427		
Field Sample ID	NYSDEC STARS Memo #1/TCLP AGV (ppb)	FT424BE2	FT424SW1	FT424SW2	FT424SW3	FT424SW4	FT427-SW1	FT427-SW2	FT427-SW3
Depth (ft bgs)		12-12.5	7.5-8	7.5-8	7.5-8	7.5-8	6.5-7	6.5-7	6.5-7
Sampling Date		36782	36782	36782	36782	36782	12/07/99	12/07/99	12/07/99
Analyte									
VOCs (ppb)									
methyl-tert-butylether	1,000	ND	ND	ND	ND	ND	ND	2	ND
benzene	14	ND	ND	ND	ND	ND	ND	ND	ND
toluene	100	ND	ND	ND	ND	ND	5 B	5 B	5 B
ethylbenzene	100	ND	ND	ND	ND	ND	ND	2	ND
m,p-xylene	100	ND	ND	ND	ND	ND	2	12	ND
o-xylene	100	ND	ND	ND	ND	ND	ND	9	ND
isopropylbenzene	100	ND	ND	ND	ND	ND	ND	2	ND
n-propylbenzene	100	ND	ND	ND	ND	ND	2	3	ND
1,3,5-trimethylbenzene	100	ND	ND	ND	ND	ND	ND	15	ND
tert-butylbenzene	100	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trimethylbenzene	100	ND	ND	ND	ND	ND	1	44	ND
sec-butylbenzene	100	2,000	ND	ND	ND	ND	8	5	ND
p-isopropyltoluene	100	ND	ND	ND	ND	ND	ND	11	ND
n-butylbenzene	100	1,600	ND	ND	ND	ND	8	ND	ND
naphthalene	200	3,300	2	ND	ND	ND	17 B	49 B	6 B
SVOCs (ppb)									
anthracene	1,000	250 J	ND	ND	ND	ND	ND	ND	ND
fluorene	1,000	1,400	ND	ND	ND	ND	ND	ND	ND
phenanthrene	1,000	3,500	ND	ND	ND	ND	ND	ND	ND
pyrene	1,000	390 J	ND	ND	ND	ND	ND	ND	ND
acenaphthene	400	1,200	ND	ND	ND	ND	ND	ND	ND
benzo[a]anthracene	0.04	ND	ND	ND	ND	ND	ND	ND	ND
fluoranthene	1,000	97 J	ND	ND	ND	ND	ND	ND	ND
benzo[b]fluoranthene	0.04	ND	ND	ND	ND	ND	ND	ND	ND
benzo[k]fluoranthene	0.04	ND	ND	ND	ND	ND	ND	ND	ND
benzo[a]pyrene	0.04	ND	ND	ND	ND	ND	ND	ND	ND
dibenzo[a,h]anthracene	1,000	ND	ND	ND	ND	ND	ND	ND	ND
benzo[g,h,i]perylene	0.04	ND	ND	ND	ND	ND	ND	ND	ND
indeno[1,2,3-cd]pyrene	0.04	ND	ND	ND	ND	ND	ND	ND	ND
chrysene	0.04	70 J	ND	ND	ND	ND	ND	ND	ND

TABLE 5-2
FORT TOTTEN
SOIL ANALYTICAL DATA

	NYSDEC STARS Memo #1 TCLP AGV (ppb)	Building 427	Building 430					Building 505	
Field Sample ID:		FT427-SW4	FT430-BE1	FT430-SW1	FT 430 SW2	FT430SW3	FT430SW4	FT505-BE1	FT505-SW1
Depth (ft bgs):		6.5-7	8-8.5	7-7.5	6.5-7	6.5-7	6.5-7	6.5-7	6.5-7
Sampling Date:		12/07/99	12/07/99	12/07/99	9/12/00	9/12/00	9/12/00	12/02/99	12/02/99
Analyte									
VOCs (ppb)									
methyl-tert-butylether	1,000	ND	5	ND	ND	ND	ND	ND	ND
benzene	14	ND	2	ND	ND	ND	ND	ND	ND
toluene	100	7 B	9 B	173	ND	ND	ND	1	1
ethylbenzene	100	ND	5	3,480	ND	ND	ND	ND	ND
m,p-xylene	100	1	13	11,200	ND	ND	ND	ND	ND
o-xylene	100	ND	ND	3,200	ND	ND	ND	ND	ND
isopropylbenzene	100	ND	6	2,810	ND	ND	ND	ND	ND
n-propylbenzene	100	ND	8	6,170	ND	ND	ND	ND	ND
1,3,5-trimethylbenzene	100	ND	10	11,900	ND	ND	ND	ND	ND
tert-butylbenzene	100	ND	ND	186	ND	ND	ND	ND	ND
1,2,4-trimethylbenzene	100	ND	39	37,700	ND	ND	ND	ND	ND
sec-butylbenzene	100	ND	140	4,790	ND	ND	ND	ND	ND
p-isopropyltoluene	100	ND	28	3,830	ND	ND	ND	ND	ND
n-butylbenzene	100	ND	ND	ND	ND	ND	ND	ND	ND
naphthalene	200	2 B	27 B	2,280	ND	ND	ND	ND	1
SVOCs (ppb)									
anthracene	1,000	ND	564	ND	ND	ND	ND	ND	ND
fluorene	1,000	ND	700	8,470	ND	ND	ND	ND	ND
phenanthrene	1,000	ND	2,120	16,000	ND	ND	ND	ND	ND
pyrene	1,000	ND	407	1,900 J	ND	ND	ND	79 J	ND
acenaphthene	400	ND	499	4,230	ND	ND	ND	ND	ND
benzo[a]anthracene	0.04	ND	ND	ND	ND	ND	ND	75 J	ND
fluoranthene	1,000	ND	144 J	876 J	ND	ND	ND	89 J	ND
benzo[b]fluoranthene	0.04	ND	ND	ND	ND	ND	ND	74 J	ND
benzo[k]fluoranthene	0.04	ND	ND	ND	ND	ND	ND	95 J	ND
benzo[a]pyrene	0.04	ND	ND	ND	ND	ND	ND	80 J	ND
dibenzo[a,h]anthracene	1,000	ND	ND	ND	ND	ND	ND	ND	ND
benzo[g,h,i]perylene	0.04	ND	ND	ND	ND	ND	ND	ND	ND
indeno[1,2,3-cd]pyrene	0.04	ND	ND	ND	ND	ND	ND	ND	ND
chrysene	0.04	ND	ND	ND	ND	ND	ND	75 J	ND

TABLE 5-2
FORT TOTTEN
SOIL ANALYTICAL DATA

		Building 505			Building 506				
Field Sample ID:	NYSDEC STARS Memo #1 TCLP AGV (ppb)	FT505-SW2	FT505-SW3	FT505-SW4	FT506-BE1	FT506-SW1	FT506-SW2	FT506-SW3	FT506-SW4
Depth (ft bgs)		6.5-7	6.5-7	6.5-7	6.5-7	6.5-7	6.5-7	6.5-7	6.5-7
Sampling Date:		12/02/99	12/02/99	12/02/99	12/01/99	12/01/99	12/01/99	12/01/99	12/01/99
Analyte									
VOCs (ppb)									
methyl-tert-butylether	1,000	ND	ND	ND	ND	ND	ND	ND	ND
benzene	14	ND	ND	ND	ND	ND	ND	ND	ND
toluene	100	1	1	1	5	5	3	4	3
ethylbenzene	100	ND	ND	ND	ND	ND	ND	ND	ND
m,p-xylene	100	1	ND	ND	ND	ND	ND	ND	ND
o-xylene	100	ND	ND	ND	ND	ND	ND	ND	ND
isopropylbenzene	100	ND	ND	ND	ND	ND	ND	ND	ND
n-propylbenzene	100	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-trimethylbenzene	100	ND	ND	ND	ND	ND	ND	ND	ND
tert-butylbenzene	100	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trimethylbenzene	100	ND	ND	ND	1	ND	ND	ND	ND
sec-butylbenzene	100	ND	ND	ND	ND	ND	ND	ND	ND
p-isopropyltoluene	100	ND	ND	ND	ND	ND	ND	ND	ND
n-butylbenzene	100	ND	ND	ND	ND	ND	ND	ND	ND
naphthalene	200	ND	ND	2	2	2	2	ND	6
SVOCs (ppb)									
anthracene	1,000	ND	ND	ND	ND	ND	ND	ND	ND
fluorene	1,000	ND	ND	ND	ND	86 J	ND	ND	163 J
phenanthrene	1,000	ND	ND	ND	98 J	ND	139 J	87 J	190 J
pyrene	1,000	ND	ND	ND	ND	ND	ND	ND	ND
acenaphthene	400	ND	ND	ND	73 J	ND	122 J	ND	102 J
benzo[a]anthracene	0.04	ND	ND	ND	90 J	ND	138 J	83 J	217 J
fluoranthene	1,000	ND	ND	ND	86 J	ND	151 J	ND	106 J
benzo[b]fluoranthene	0.04	ND	ND	ND	97 J	ND	156 J	88 J	126 J
benzo[k]fluoranthene	0.04	ND	ND	ND	103 J	ND	156 J	83 J	120 J
benzo[a]pyrene	0.04	ND	ND	ND	ND	ND	ND	ND	ND
dibenzo[a,h]anthracene	1,000	ND	ND	ND	ND	ND	ND	ND	ND
benzo[g,h,i]perylene	0.04	ND	ND	ND	ND	ND	ND	ND	ND
indeno[1,2,3-cd]pyrene	0.04	ND	ND	ND	83 J	ND	133 J	ND	117 J
chrysene	0.04	ND	ND	ND					

TABLE 5-2
FORT TOTTEN
SOIL ANALYTICAL DATA

		Building 512					Building 513		
Field Sample ID:	NYSDEC STARS Memo #1 TCLP AGV (ppb)	FT512-BE1	FT512-SW1	FT512-SW2	FT512-SW3	FT512-SW4	FT513-BE1	FT513-SW1	FT513-SW1D
Depth (ft bgs):		8-8.5	8-8.5	8-8.5	8-8.5	8-8.5	8-8.5	8-8.5	8-8.5
Sampling Date:		12/02/99	12/02/99	12/02/99	12/02/99	12/02/99	12/02/99	12/02/99	12/02/99
Analyte									
VOCs (ppb)									
methyl-tert-butylether	1,000	ND	ND	ND	ND	ND	ND	ND	ND
benzene	14	ND	ND	ND	ND	ND	ND	ND	ND
toluene	100	1	2	3	2	2	5	7	7
ethylbenzene	100	ND	ND	ND	ND	ND	ND	ND	ND
m,p-xylene	100	ND	ND	ND	ND	ND	ND	1	1
o-xylene	100	ND	ND	ND	ND	ND	ND	ND	ND
isopropylbenzene	100	ND	ND	ND	ND	ND	ND	ND	ND
n-propylbenzene	100	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-trimethylbenzene	100	ND	ND	ND	ND	ND	ND	ND	ND
tert-butylbenzene	100	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trimethylbenzene	100	ND	ND	ND	ND	ND	ND	ND	ND
sec-butylbenzene	100	ND	ND	ND	ND	ND	ND	ND	ND
p-isopropyltoluene	100	ND	ND	ND	ND	ND	ND	ND	ND
n-butylbenzene	100	ND	ND	ND	ND	ND	ND	ND	ND
naphthalene	200	ND	ND	1	ND	1	ND	3	ND
SVOCs (ppb)									
anthracene	1,000	ND	ND	ND	ND	ND	ND	151 J	85 J
fluorene	1,000	ND	ND	ND	ND	ND	ND	ND	ND
phenanthrene	1,000	149 J	ND	253 J	209 J	208 J	139 J	710	403
pyrene	1,000	585	ND	1,170	1,040	1,920	399	1,410	770
acenaphthene	400	ND	ND	ND	ND	ND	ND	ND	ND
benzo[a]anthracene	0.04	342	ND	660	650	1,030	244 J	836	455
fluoranthene	1,000	649	ND	1,140	1,030	1,390	500	1,740	977
benzo[b]fluoranthene	0.04	411	ND	914	798	1,350	263 J	956	449
benzo[k]fluoranthene	0.04	491	ND	775	730	1,050	278 J	956	518
benzo[a]pyrene	0.04	494	ND	933	841	1,410	280 J	946	502
dibenzo[a,h]anthracene	1,000	113 J	ND	202 J	182 J	282 J	75 J	193 J	128 J
benzo[g,h,i]perylene	0.04	249 J	ND	415	353	511	149 J	322 J	253 J
indeno[1,2,3-cd]pyrene	0.04	252 J	ND	431	371	567	154 J	354	265 J
chrysene	0.04	396	ND	805	726	1,100	268 J	925	486

TABLE 5-2
FORT TOTTEN
SOIL ANALYTICAL DATA

		Building 513		
Field Sample ID:	NYSDEC STARS Memo #1 TCLP AGV (ppb)	FT513-SW2	FT513-SW3	FT513-SW4
Depth (ft bgs):		8-8.5	8-8.5	8-8.5
Sampling Date:		12/02/99	12/02/99	12/02/99
Analyte				
VOCs (ppb)				
methyl-tert-butylether	1,000	ND	ND	ND
benzene	14	ND	ND	ND
toluene	100	3	1	2
ethylbenzene	100	ND	ND	ND
m,p-xylene	100	ND	ND	ND
o-xylene	100	ND	ND	ND
isopropylbenzene	100	ND	ND	ND
n-propylbenzene	100	ND	ND	ND
1,3,5-trimethylbenzene	100	ND	ND	ND
tert-butylbenzene	100	ND	ND	ND
1,2,4-trimethylbenzene	100	ND	ND	ND
sec-butylbenzene	100	ND	ND	ND
p-isopropyltoluene	100	ND	ND	ND
n-butylbenzene	100	ND	ND	ND
naphthalene	200	1	ND	ND
SVOCs (ppb)				
anthracene	1,000	ND	ND	ND
fluorene	1,000	ND	ND	ND
phenanthrene	1,000	ND	ND	ND
pyrene	1,000	ND	ND	163 J
acenaphthene	400	ND	ND	ND
benzo[a]anthracene	0.04	ND	ND	109 J
fluoranthene	1,000	ND	ND	188 J
benzo[b]fluoranthene	0.04	ND	ND	122 J
benzo[k]fluoranthene	0.04	ND	ND	156 J
benzo[a]pyrene	0.04	78 J	ND	148 J
dibenzo[a,h]anthracene	1,000	ND	ND	ND
benzo[g,h,i]perylene	0.04	81 J	ND	102 J
indeno[1,2,3-cd]pyrene	0.04	ND	ND	96 J
chrysene	0.04	ND	ND	124 J

TABLE 5-2
FORT TOTTEN
SOIL ANALYTICAL DATA

Legend

ft bgs:	Feet below ground surface.
J:	Estimated value; result is less than the sample quantitation limit but greater than zero.
B:	Analyte found in associated blank as well as sample.
ND:	Analyte not detected.
TCLP AGV:	TCLP Alternative Guidance Value (New York State Department of Environmental Conservation Division of Spills Management STARS Memo #1, Petroleum-Contaminated Soil Guidance Policy, August 1992).

APPENDIX A
Data Validation Memoranda

MEMORANDUM

TO: Fred Poli

FROM: Eric Malarek

SUBJECT: Fort Totten Data Validation - Volatiles
Waste Stream Technology, Inc.
Order # 9901-1927

DATE: May 26, 2000

The purpose of this memorandum is to present the data validation report for the samples collected at Fort Totten during the December 1-2, 1999 sampling events. Samples were analyzed for volatile organic compounds (VOCs) using USEPA SW-846 Method 8260B. Four soil samples were validated in this report:

IT Sample ID	WST Lab ID
FT512-SW2	WS59588
FT513-SW3	WS59603
FT506-SW3	WS59609
FT505-BE1	WS59616

Data were reviewed by Eric Malarek and validated using a combination of method-specific criteria, laboratory SOP, and the *USEPA Region II SOP for the Validation of Analytical Data Analyzed by USEPA SW-846 Method 8260B* (December 1997). Parameters evaluated are presented in Table 1. Data associated with parameters in compliance with quality control specifications have not been qualified. Data associated with parameters that did not comply with quality control specifications and directly impacted project data have been qualified in accordance with USEPA Region II specifications.

Table 1. Laboratory Performance Criteria

Qualified		**Parameter**
Yes	**No**	
	X	Holding Times
	X	Blank Analysis
	X	Instrument Performance Results
X		Initial Calibration
X		Continuing Calibration
	X	System Monitoring Compounds
	X	Laboratory Control Spike
	X	Internal Standards
	X	Matrix Spike and Matrix Spike Duplicate
	X	Quantitation Verification

The quality of data collected in support of this sampling activity is considered acceptable with noted qualifications.

FORT TOTTEN VALIDATION REPORT
VOLATILES REVIEW
SDG 9901-1927

I-Holding Times

Form I

Holding time criteria: preserved samples, Cool 4°C±2°C, 14 days from sample collection to analysis.

- Samples FT512-SW2, FT513-SW3, and FT505-BE1 were collected on 12/2/99 and FT506-SW3 collected 12/1/99. Sample FT512-SW2 was analyzed on 12/7/99. Sample FT513-SW3 was analyzed on 12/8/99. Sample FT505-BE1 was analyzed on 12/13/99. Sample FT506-SW3 was analyzed on 12/6/99. All criteria were met. No qualifiers were applied.

II-Blank Analysis

Forms I, IV, and chromatograms

Blanks were evaluated to determine the presence and magnitude of contamination problems resulting from field and laboratory activities. No trip blank was required for soil samples. No rinse blank was collected with the samples associated with this SDG.

- Table 2 summarizes the blank contamination study.

Table 2: Samples Affected Due to VOC Blank Contamination

Analysis Date	QC Blank ID	Compounds	Concentration	Action Level	Sample qualified with "B"
12/6/99	IB120699 (VBLK01)	None	NA	NA	None
12/7/99	IB120799 (VBLK01)	None	NA	NA	None
12/8/99	IB120899 (VBLK01)	None	NA	NA	None
12/13/99	IB121399 (VBLK01)	Naphthalene	2 (ug/kg)	5 (ug/kg)	None

III-Instrument Performance Check

Form V

The analysis of the instrument performance check solution must be performed at the beginning of each 12-hour period during which samples are analyzed. The instrument performance check, bromofluorobenzene (BFB), met the ion abundance criteria.

- All criteria were met. No qualification was applied.

IV-Initial Calibration

Form VI, and chromatograms

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for volatile target compounds. The percent relative standard deviation (%RSD) and the Relative Response Factor (RRF) should all fall within the control criteria of ≤30% and ≥0.1 for system performance check compounds (≥0.3 for PCA & chlorobenzene), and ≤15% and ≥0.05 for all other target compounds, respectively. If linear regression is used, the correlation coefficient should be >0.990.

- For soil initial calibration performed on 11/11/99 on instrument 5971, naphthalene (19.1%) exceeded criteria among the requested target list. Naphthalene was quantitated using linear regression. For naphthalene, the samples validated were qualified as estimated ("J") for detects and non-detects no qualifier.

V-Continuing Calibration
Form VII, and chromatograms
Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for volatile target compounds. The percent difference (%D) and the Relative Response Factor (RRF) should all fall within the control criteria of ≤20% and ≥0.05 for calibration check compounds and for all other target compounds. Continuing calibration standards containing both target compounds and surrogates were analyzed at the beginning of each 12-hour analysis.

- For soil continuing calibration performed on 12/6/99 @10:41 on instrument 5971, all target compounds reported on form 1s met criteria. No qualifiers were applied. Sample FT506-SW3 was analyzed using this continuing calibration.

- For soil continuing calibration performed on 12/7/99 @12:42 on instrument 5971, all target compounds reported on form 1s met criteria. No qualifiers were applied. Sample FT512-SW2 was analyzed using this continuing calibration.

- For soil continuing calibration performed on 12/8/99 @9:04 on instrument 5971, all target compounds reported on form 1s met criteria. No qualifiers were applied. Sample FT513-SW3 was analyzed using this continuing calibration.

- For soil continuing calibration performed on 12/13/99 @12:31 on instrument 5971, naphthalene (21.4%) exceeded criteria among the requested target list. For naphthalene, the samples validated were qualified as estimated ("J") for detects and non-detects no qualifier. Sample FT505-BE1 was analyzed using this continuing calibration.

VI-System Monitoring Compound (Surrogates)
Form II, and chromatograms
Laboratory performance on individual samples is evaluated through the review of surrogate spike samples. The surrogates and recovery ranges are:

1,2-dichloroethane-d4 (%)	(70-121%)
Toluene-d8 (%)	(81-117%)
Bromofluorobenzene (%)	(74-121%)

- All criteria were met for samples validated. No qualifiers were applied.

VII-Laboratory Control Spike
chromatograms
Laboratory control spike is evaluated to determine accuracy of the analytical method on various matrices. Specific criteria included: frequency (1 per 20 samples for each matrix), and percent RPD within control criteria.

- Samples MR120699-LLS (VREF01 LLS), MR120799-LLS (VREF01 LLS) MR120899-LLS (VREF01 LLS) and MR121399-LLS (VREF01 LLS) were used as the laboratory control samples. All soil percent recoveries were within control limits. No qualifier was applied.

VIII-Internal Standards (IS)
Form VIII, and chromatograms
Internal standards performance criteria ensure that GC/MS sensitivity and response are stable during every analytical run. Specific criteria include: area counts (-50% to +100%) of the associated calibration standard, and retention time (± 30 seconds) from that of the associated calibration standard.

- All area counts and retention times were within the control criteria for samples validated. No qualifier was applied.

IX-Matrix Spike/Matrix Spike Duplicate
Form III, *and chromatograms*
Matrix spike/Matrix spike duplicates are evaluated to determine long-term precision and accuracy of the analytical method on various matrices. Specific criteria included: frequency (1 per 20 samples for each matrix), and percent RPD within control criteria.

- Samples FT407-SW2, FT512-BE1, and FT506-BE1 were analyzed as MS/MSD. Since the MS/MSD samples were not validated and all criteria were met. No qualifiers were applied.

X-Quantitation Verification
Form 1, and chromatograms
The accuracy of analytical results were verified through the calculation of several parameters. The percent difference between the calculated and reported values should be ≤10%.

Sample FT512-SW2 for toluene,

Reported conc.= 3 ug/kg,

conc (ug/kg) = (Ax)*(Is)*(DF)/(Ais)*(Avg. RRF)*(Ws)*(Fs)

Ax is the compound area
Ais is the corresponding internal standard area
Is is the corresponding internal standard added (ng)
DF is the sample dilution factor
RRF is the average relative response factor.
Ws is the wet-weight of sample used (g)
Fs is the percent dry weight fraction

conc (ug/kg) = (33785)*(30 ng)*(5)/(502571)*(0.818)*(5.0 g)*(0.8782) = 2.81 ng/g = 2.81 ug/kg

%D= 6.9%
Values were within 10% difference.

MEMORANDUM

TO: Fred Poli

FROM: Eric Malarek

SUBJECT: Fort Totten Data Validation - Semivolatiles
Waste Stream Technology, Inc.
Order # 9901-1927

DATE: May 31, 2000

The purpose of this memorandum is to present the data validation report for the samples collected at Fort Totten during the December 1-2, 1999 sampling events. Samples were analyzed for semivolatile organic compounds (SVOCs) using USEPA SW-846 Method 8270C. Four soil samples were validated in this report:

IT Sample ID	WST Lab ID
FT512-SW2	WS59588
FT513-SW3	WS59603
FT506-SW3	WS59609
FT505-BE1	WS59616

Data were reviewed by Eric Malarek and validated using a combination of method-specific criteria, laboratory SOP, and the *USEPA Region II SOP for Validation of SW-846 Method 8270B* (February, 1995). Parameters evaluated are presented in Table 1. Data associated with parameters in compliance with quality control specifications have not been qualified. Data associated with parameters that did not comply with quality control specifications and directly impacted project data have been qualified in accordance with USEPA Region II specifications.

Table 1. Laboratory Performance Criteria

Qualified		Parameter
Yes	**No**	
	X	Holding Times
	X	Blank Analysis
	X	Instrument Performance Results
X		Initial Calibration
	X	Continuing Calibration
	X	System Monitoring Compounds
	X	Internal Standards
	X	Laboratory Control Standard
	X	Matrix Spike/Matrix Spike Duplicate
	X	Quantitation Verification

The quality of data collected in support of this sampling activity is considered acceptable with noted qualifications.

FORT TOTTEN VALIDATION REPORT
SEMI-VOLATILES REVIEW
SDG 9901-1927

I-Holding Times
Form I
Holding time criteria: preserved samples, Cool 4°C±2°C, 14 days from sample collection to extraction and 40 days from extraction to analysis.

- Samples were extracted 12/9-13/99 and analyzed 12/10-14/99. All criteria were met. No qualifier was applied.

II-Blank Analysis
Forms I, IV, and chromatograms
Blanks were evaluated to determine the presence and magnitude of contamination problems resulting from field and laboratory activities. No rinse blank was collected with samples associated with this SDG.

- Table 2 summarizes the blank contamination and qualifications. No qualifications were required due to blank criteria.

Table 2: Samples Affected Due to SVOC Blank Contamination

Instrument ID	Analysis Date	QC Blank ID	Compounds	Conc. (ug/L)	Action Level (ug/L)	Samples qualified with "B"
5972C	12/10/99	MB120999	None	None	None	None
5972A	12/13/99	MB121399	None	None	None	None

III-Instrument Performance Check
Form V, chromatograms
The analysis of the instrument performance check solution must be performed at the beginning of each 12-hour period during which samples are analyzed.

- The instrument performance check, decafluorotriphenylphosphine (DFTPP), met the ion abundance criteria. No qualification was applied.

IV-Initial Calibration
Form VI, chromatograms
Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for semivolatile target compounds. All percent relative standard deviations should be less than 30% for CCCs and 15% for other compounds. The relative response factors should be greater than 0.05. If linear regression is used, the correlation coefficient should be >0.990.

- For calibration performed on 11/29/99 on instrument 5972C, reported compounds naphthalene (17.5%), acenaphthene (16.8%), fluorene (19.6%), benzo(k)fluoranthene (23.0%), and dibenz(a,h)anthracene (19.3%) exceeded the criteria. These compounds were quantitated using either quadratic equation or average response factor. All positive values were qualified as estimated "J" and non-detects no qualifier. Samples FT512-SW2 and FT506-SW3 were analyzed under this calibration.

- For calibration performed on 12/7/99 on instrument 5972A, reported compounds naphthalene (16.1%), fluorene (17.4%), and benzo(k)fluoranthene (18.9%) exceeded the criteria. These compounds were quantitated using either quadratic equation or average response factor. All positive values were qualified as estimated "J" and non-detects no qualifier. Samples FT505-BE1 and FT513-SW3 were analyzed under this calibration.

V-Continuing Calibration

Form VII, and chromatograms

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for semi-volatile target compounds. Continuing calibration standards containing both target compounds and surrogates were analyzed at the beginning of each 12-hour analysis. All percent differences should be less than 20% for CCCs and 15% for other compounds.

- For the continuing calibration performed on 12/10/99 @09:25 on instrument 5972C, all criteria were met for reported compounds. No qualifiers were applied.

- For the continuing calibration performed on 12/13/99 @11:06 on instrument 5972A, all criteria were met for reported compounds. No qualifiers were applied.

- For the continuing calibration performed on 12/14/99 @09:49 on instrument 5972A, all criteria were met for reported compounds. No qualifiers were applied.

VI-Surrogate Spikes

Form II, and chromatograms

Laboratory performance on individual samples is evaluated through the review of surrogate spike samples.

- For validated samples, all surrogates were within control criteria. No qualifiers were applied.

VII-Internal Standards (IS)

Form VIII, and chromatograms

Internal standards performance criteria ensure that GC/MS sensitivity and response are stable during every analytical run. Specific criteria include: area counts (-50% to +100%) of the associated calibration standard, and retention time (± 30 seconds) from that of the associated calibration standard.

- All criteria were met for validated samples. No qualifiers were applied.

VIII-Laboratory Control Standard (LCS)

LCSs are used to monitor laboratory accuracy by calculating the percent recoveries of the spiked compounds.

- Samples MR120999-DS, MR121399I-DS, and MR121399II-DS were used as the laboratory control samples. All soil percent recoveries were within control limits for reported compounds. No qualifiers were applied.

IX-Matrix Spike/Matrix Spike Duplicate

Form III, and chromatograms

Matrix spike/Matrix spike duplicates are evaluated to determine long-term precision and accuracy of the analytical method on various matrices. Specific criteria included: frequency (1 per 20 samples for each matrix), and percent recoveries and RPD within control criteria.

- Samples FT506-SW1 and FT513-SW1 were analyzed as MS/MSD. For MS/MSD FT506-SW1, recoveries were outside of control limits (78-138%) for pyrene (77%). For MS/MSD FT506-SW1, recoveries were outside of control limits (77-113%) for acenaphthene (72%). %RPD was within control limits for the reported compounds. Since the MS/MSD samples were not validated and the laboratory control standards were within criteria, no qualifiers were applied based upon these outliers.

X-Quantitation Verification

Form 1, and chromatograms

The accuracy of analytical results were verified through the calculation of several parameters. All values were within 10%. Any value reported below the reporting limit and above the MDL should be considered as estimated.

Sample FT512-SW2 for dibenz(a,h)anthracene,

conc. (ug/kg). = (Ax)*(Is)*(Vt)*(DF) / (Ais)*(Avg. RF)*(Ws)*(Vi)*(fraction solids), where:

Ax is the compound area
Ais is the corresponding internal standard area
Is is the corresponding internal standard concentration
Vt is the volume of total extract in milliliters
DF is the dilution factor
Avg. RF is the average relative response factor
Vi is the volume of the extract injected in microliters
Ws is the weight of sample extracted in grams.

= (658404)*(40)*(1000)*(1) / (4139329)*(1.174)*(30.6)*(1.0)*(0.878) = 202 ug/kg

Reported Value = 202 ug/kg
% Difference = 0.0%

MEMORANDUM

TO: Fred Poli

FROM: Eric Malarek

SUBJECT: Fort Totten Data Validation - Volatiles
Waste Stream Technology, Inc.
Order # 9901-1953

DATE: May 26, 2000

The purpose of this memorandum is to present the data validation report for the samples collected at Fort Totten during the December 6-7, 1999 sampling events. Samples were analyzed for volatile organic compounds (VOCs) using USEPA SW-846 Method 8260B. One soil sample was validated in this report:

IT Sample ID	WST Lab ID
FT141-BE1	WS59772

Data were reviewed by Eric Malarek and validated using a combination of method-specific criteria, laboratory SOP, and the *USEPA Region II SOP for the Validation of Analytical Data Analyzed by USEPA SW-846 Method 8260B* (December 1997). Parameters evaluated are presented in Table 1. Data associated with parameters in compliance with quality control specifications have not been qualified. Data associated with parameters that did not comply with quality control specifications and directly impacted project data have been qualified in accordance with USEPA Region II specifications.

Table 1. Laboratory Performance Criteria

Qualified		**Parameter**
Yes	**No**	
	X	Holding Times
	X	Blank Analysis
	X	Instrument Performance Results
X		Initial Calibration
	X	Continuing Calibration
	X	System Monitoring Compounds
	X	Laboratory Control Spike
	X	Internal Standards
	X	Quantitation Verification

The quality of data collected in support of this sampling activity is considered acceptable with noted qualifications.

FORT TOTTEN VALIDATION REPORT
VOLATILES REVIEW
SDG 9901-1953

I-Holding Times
Form I
Holding time criteria: preserved samples, Cool 4°C±2°C, 14 days from sample collection to analysis.

- Sample FT141-BE1 was collected on 12/6/99 and analyzed 12/15/99. All criteria were met. No qualifier was applied

II-Blank Analysis
Forms I, IV, and chromatograms
Blanks were evaluated to determine the presence and magnitude of contamination problems resulting from field and laboratory activities. No trip blank is required for soil samples. No rinse blank was collected with samples associated with this SDG.

- Table 2 summarizes the blank contamination study.

Table 2: Samples Affected Due to VOC Blank Contamination

Analysis Date	QC Blank ID	Compounds	Concentration	Action Level	Sample qualified with "B"
12/15/99	IB121599 (VBLK01)	Toluene Naphthalene	1 (ug/kg) 2 (ug/kg)	5 (ug/kg) 10 (ug/kg)	None
12/20/99	MB122099MEOH (VBLK01MEOH)	None	NA	NA	None

III-Instrument Performance Check
Form V
The analysis of the instrument performance check solution must be performed at the beginning of each 12-hour period during which samples are analyzed. The instrument performance check, bromofluorobenzene (BFB), met the ion abundance criteria.

- All criteria were met. No qualification was applied.

IV-Initial Calibration
Form VI, and chromatograms
Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for volatile target compounds. The percent relative standard deviation (%RSD) and the Relative Response Factor (RRF) should all fall within the control criteria of ≤30% and ≥0.1 for system performance check compounds (≥0.3 for PCA & chlorobenzene), and ≤15% and ≥0.05 for all other target compounds, respectively. If linear regression is used, the correlation coefficient should be >0.990.

- For soil initial calibration performed on 11/11/99 on instrument 5971, reported compound naphthalene (19.1%) exceeded criteria. Naphthalene was quantitated using linear regression. The sample FT141-BE1 was qualified as estimated ("J") for naphthalene detects using this initial calibration.

- For soil initial calibration performed on 09/30/99 on instrument 5972B, all reported compounds reported on form 1s met criteria. No qualifers were applied.

V-Continuing Calibration
Form VII, and chromatograms
Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for volatile target compounds. The percent difference (%D) and the Relative Response Factor (RRF) should all fall within the control criteria of ≤20% and ≥0.05 for calibration check compounds and for all other target compounds. Continuing calibration standards containing both target compounds and surrogates were analyzed at the beginning of each 12-hour analysis.

- For soil continuing calibration performed on 12/15/99 @12:28 on instrument 5971, all target compounds reported on form 1s met criteria. No qualifiers were applied. The sample FT141-BE1 was analyzed using this continuing calibration.

- For soil continuing calibration performed on 12/15/99 @15:00 on instrument 5971, all target compounds reported on form 1s met criteria. No qualifiers were applied. The sample FT141-BE1 was analyzed using this continuing calibration.

- For soil continuing calibration performed on 12/20/99 @11:29 on instrument 5972B, all target compounds reported on form 1s met criteria. No qualifiers were applied.

VI-System Monitoring Compound (Surrogates)
Form II, and chromatograms
Laboratory performance on individual samples is evaluated through the review of surrogate spike samples. The surrogates and recovery ranges are:

1,2-dichloroethane-d4 (%)	(70-121%)
Toluene-d8 (%)	(81-117%)
Bromofluorobenzene (%)	(74-121%)

- All criteria were met for the sample validated. No qualifiers were applied.

VII-Laboratory Control Spike
chromatograms
Laboratory control spike is evaluated to determine accuracy of the analytical method on various matrices. Specific criteria included: frequency (1 per 20 samples for each matrix), and percent RPD within control criteria.

- Samples MR121599-LLS (VREF01 LLS) and MR122099-MeOH (VREF01 MEOH) were used as the laboratory control samples. The sample validated was associated with laboratory control sample MR121599-LLS (VREF01 LLS). All soil percent recoveries were within control limits. No qualifier was applied.

VIII-Internal Standards (IS)
Form VIII, and chromatograms
Internal standards performance criteria ensure that GC/MS sensitivity and response are stable during every analytical run. Specific criteria include: area counts (-50% to +100%) of the associated calibration standard, and retention time (± 30 seconds) from that of the associated calibration standard.

- All area counts and retention times were within the control criteria for the sample validated. No qualifier was applied.

IX-Quantitation Verification

Form 1, and chromatograms

The accuracy of analytical results were verified through the calculation of several parameters. The percent difference between the calculated and reported values should be ≤10%.

Sample FT141-BE1 for toluene,

Reported conc.= 22 ug/kg,

conc (ug/kg) = (Ax)*(Is)*(DF)/(Ais)*(Avg. RRF)*(Ws)*(Fs)

Ax is the compound area
Ais is the corresponding internal standard area
Is is the corresponding internal standard added (ng)
DF is the sample dilution factor
RRF is the average relative response factor.
Ws is the wet-weight of sample used (g)
Fs is the percent dry weight fraction

conc (ug/kg) = (57403)*(30 ng)*(5)/(438027)*(0.818)*(1.23 g)*(0.8952) = 22 ng/g = 22 ug/kg

%D= 0.0%
Values were within 10% difference.

MEMORANDUM

TO: Fred Poli

FROM: Eric Malarek

SUBJECT: Fort Totten Data Validation - Semivolatiles
Waste Stream Technology, Inc.
Order # 9901-1953

DATE: May 30, 2000

The purpose of this memorandum is to present the data validation report for the samples collected at Fort Totten during the December 6-7, 1999 sampling events. Samples were analyzed for semivolatile organic compounds (SVOCs) using USEPA SW-846 Method 8270C. One soil sample was validated in this report:

IT Sample ID	WST Lab ID
FT141-BE1	WS59772

Data were reviewed by Eric Malarek and validated using a combination of method-specific criteria, laboratory SOP, and the *USEPA Region II SOP for Validation of SW-846 Method 8270B* (February, 1995). Parameters evaluated are presented in Table 1. Data associated with parameters in compliance with quality control specifications have not been qualified. Data associated with parameters that did not comply with quality control specifications and directly impacted project data have been qualified in accordance with USEPA Region II specifications.

Table 1. Laboratory Performance Criteria

Qualified		Parameter
Yes	No	
	X	Holding Times
	X	Blank Analysis
	X	Instrument Performance Results
X		Initial Calibration
	X	Continuing Calibration
	X	System Monitoring Compounds
	X	Internal Standards
	X	Laboratory Control Standard
	X	Matrix Spike/Matrix Spike Duplicate
	X	Quantitation Verification

The quality of data collected in support of this sampling activity is considered acceptable with noted qualifications.

FORT TOTTEN VALIDATION REPORT
SEMI-VOLATILES REVIEW
SDG 9901-1953

I-Holding Times
Form I
Holding time criteria: preserved samples, Cool 4°C±2°C, 14 days from sample collection to extraction and 40 days from extraction to analysis.

- The sample FT141-BE1was extracted 12/16/99 and analyzed 12/20/99. All criteria were met. No qualifier was applied.

II-Blank Analysis
Forms I, IV, and chromatograms
Blanks were evaluated to determine the presence and magnitude of contamination problems resulting from field and laboratory activities. No rinse blank was collected with samples associated with this SDG.

- Table 2 summarizes the blank contamination and qualifications. No qualifications were required due to blank criteria.

Table 2: Samples Affected Due to SVOC Blank Contamination

Instrument ID	Analysis Date	QC Blank ID	Compounds	Conc. (ug/L)	Action Level (ug/L)	Samples qualified with "B"
5972C	12/17/99	MB121699	None	None	None	None
5972C	12/17/99	MB121799	None	None	None	None

III-Instrument Performance Check
Form V, chromatograms
The analysis of the instrument performance check solution must be performed at the beginning of each 12-hour period during which samples are analyzed.

- The instrument performance check, decafluorotriphenylphosphine (DFTPP), met the ion abundance criteria. No qualification was applied.

IV-Initial Calibration
Form VI, chromatograms
Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for semivolatile target compounds. All percent relative standard deviations should be less than 30% for CCCs and 15% for other compounds. The relative response factors should be greater than 0.05. If linear regression is used, the correlation coefficient should be >0.990.

- For calibration performed on 12/7/99 on instrument 5972A, reported compounds naphthalene (16.1%), fluorene (17.4%), and benzo(k)fluoranthene (18.9%) exceeded the criteria. These compounds were quantitated using either quadratic equation or average response factor. All positive values were qualified as estimated "J" and non-detects no qualifier.

V-Continuing Calibration
Form VII, and chromatograms
Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for semi-volatile target compounds. Continuing calibration standards containing both target compounds and surrogates were analyzed at the beginning of each 12-hour analysis. All percent differences should be less than 20% for CCCs and 15% for other compounds.

- For the continuing calibration performed on 12/17/99 @12:11 on instrument 5972A, all criteria were met for reported compounds. No qualifiers were applied.

- For the continuing calibration performed on 12/20/99 @09:46 on instrument 5972A, all criteria were met for reported compounds. No qualifiers were applied.

VI-Surrogate Spikes
Form II, and chromatograms
Laboratory performance on individual samples is evaluated through the review of surrogate spike samples.

- For sample FT141-BE1, all surrogates were diluted out (20X). No qualifiers were applied based upon these outliers.

VII-Internal Standards (IS)
Form VIII, and chromatograms
Internal standards performance criteria ensure that GC/MS sensitivity and response are stable during every analytical run. Specific criteria include: area counts (-50% to +100%) of the associated calibration standard, and retention time (± 30 seconds) from that of the associated calibration standard.

- All criteria were met for sample FT141-BE1. No qualifiers were applied.

VIII-Laboratory Control Standard (LCS)
LCSs are used to monitor laboratory accuracy by calculating the percent recoveries of the spiked compounds.

- Samples MR121699-DS and MR121799-SS were used as the laboratory control samples. All soil percent recoveries were within control limits. No qualifiers were applied.

IX-Matrix Spike/Matrix Spike Duplicate
Form III, and chromatograms
Matrix spike/Matrix spike duplicates are evaluated to determine long-term precision and accuracy of the analytical method on various matrices. Specific criteria included: frequency (1 per 20 samples for each matrix), and percent recoveries and RPD within control criteria.

- Sample FT424-BE1 was analyzed as MS/MSD. MS/MSD recoveries were outside of control limits (78-138%) for pyrene (58, 57%). %RPD was outside of control limits (30%) for phenanthrene (34%). Since the MS/MSD samples were not validated and the laboratory control standards were within criteria, no qualifiers were applied based upon these outliers.

X-Quantitation Verification

Form 1, and chromatograms

The accuracy of analytical results were verified through the calculation of several parameters. All values were within 10%. Any value reported below the reporting limit and above the MDL should be considered as estimated.

Sample FT141-BE1 for anthracene,

conc. (ug/kg). = (Ax)*(Is)*(Vt)*(DF) / (Ais)*(Avg. RF)*(Ws)*(Vi)*(fraction solids), where:

Ax is the compound area
Ais is the corresponding internal standard area
Is is the corresponding internal standard concentration
Vt is the volume of total extract in milliliters
DF is the dilution factor
Avg. RF is the average relative response factor
Vi is the volume of the extract injected in microliters
Ws is the weight of sample extracted in grams.

= (32969)*(40)*(1000)*(20) / (516850)*(1.223)*(30.1)*(1.0)*(0.895) = 1550 ug/kg

Reported Value = 1550 ug/kg
% Difference = 0.0%

MEMORANDUM

TO: Fred Poli

FROM: Eric Malarek

SUBJECT: Fort Totten Data Validation - Semivolatiles
Waste Stream Technology, Inc.
Order # 9901-1953

DATE: May 30, 2000

The purpose of this memorandum is to present the data validation report for the samples collected at Fort Totten during the December 6-7, 1999 sampling events. Samples were analyzed for semivolatile organic compounds (SVOCs) using USEPA SW-846 Method 8270C. One soil sample was validated in this report:

IT Sample ID	WST Lab ID
FT141-BE1	WS59772

Data were reviewed by Eric Malarek and validated using a combination of method-specific criteria, laboratory SOP, and the *USEPA Region II SOP for Validation of SW-846 Method 8270B* (February, 1995). Parameters evaluated are presented in Table 1. Data associated with parameters in compliance with quality control specifications have not been qualified. Data associated with parameters that did not comply with quality control specifications and directly impacted project data have been qualified in accordance with USEPA Region II specifications.

Table 1. Laboratory Performance Criteria

Qualified		Parameter
Yes	No	
	X	Holding Times
	X	Blank Analysis
	X	Instrument Performance Results
X		Initial Calibration
	X	Continuing Calibration
	X	System Monitoring Compounds
	X	Internal Standards
	X	Laboratory Control Standard
	X	Matrix Spike/Matrix Spike Duplicate
	X	Quantitation Verification

The quality of data collected in support of this sampling activity is considered acceptable with noted qualifications.

FORT TOTTEN VALIDATION REPORT
SEMI-VOLATILES REVIEW
SDG 9901-1953

I-Holding Times

Form I

Holding time criteria: preserved samples, Cool 4°C±2°C, 14 days from sample collection to extraction and 40 days from extraction to analysis.

- The sample FT141-BE1was extracted 12/16/99 and analyzed 12/20/99. All criteria were met. No qualifier was applied.

II-Blank Analysis

Forms I, IV, and chromatograms

Blanks were evaluated to determine the presence and magnitude of contamination problems resulting from field and laboratory activities. No rinse blank was collected with samples associated with this SDG.

- Table 2 summarizes the blank contamination and qualifications. No qualifications were required due to blank criteria.

Table 2: Samples Affected Due to SVOC Blank Contamination

Instrument ID	Analysis Date	QC Blank ID	Compounds	Conc. (ug/L)	Action Level (ug/L)	Samples qualified with "B"
5972C	12/17/99	MB121699	None	None	None	None
5972C	12/17/99	MB121799	None	None	None	None

III-Instrument Performance Check

Form V, chromatograms

The analysis of the instrument performance check solution must be performed at the beginning of each 12-hour period during which samples are analyzed.

- The instrument performance check, decafluorotriphenylphosphine (DFTPP), met the ion abundance criteria. No qualification was applied.

IV-Initial Calibration

Form VI, chromatograms

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for semivolatile target compounds. All percent relative standard deviations should be less than 30% for CCCs and 15% for other compounds. The relative response factors should be greater than 0.05. If linear regression is used, the correlation coefficient should be >0.990.

- For calibration performed on 12/7/99 on instrument 5972A, reported compounds naphthalene (16.1%), fluorene (17.4%), and benzo(k)fluoranthene (18.9%) exceeded the criteria. These compounds were quantitated using either quadratic equation or average response factor. All positive values were qualified as estimated "J" and non-detects no qualifier.

V-Continuing Calibration

Form VII, and chromatograms

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for semi-volatile target compounds. Continuing calibration standards containing both target compounds and surrogates were analyzed at the beginning of each 12-hour analysis. All percent differences should be less than 20% for CCCs and 15% for other compounds.

- For the continuing calibration performed on 12/17/99 @12:11 on instrument 5972A, all criteria were met for reported compounds. No qualifiers were applied.

- For the continuing calibration performed on 12/20/99 @09:46 on instrument 5972A, all criteria were met for reported compounds. No qualifiers were applied.

VI-Surrogate Spikes

Form II, and chromatograms

Laboratory performance on individual samples is evaluated through the review of surrogate spike samples.

- For sample FT141-BE1, all surrogates were diluted out (20X). No qualifiers were applied based upon these outliers.

VII-Internal Standards (IS)

Form VIII, and chromatograms

Internal standards performance criteria ensure that GC/MS sensitivity and response are stable during every analytical run. Specific criteria include: area counts (-50% to +100%) of the associated calibration standard, and retention time (± 30 seconds) from that of the associated calibration standard.

- All criteria were met for sample FT141-BE1. No qualifiers were applied.

VIII-Laboratory Control Standard (LCS)

LCSs are used to monitor laboratory accuracy by calculating the percent recoveries of the spiked compounds.

- Samples MR121699-DS and MR121799-SS were used as the laboratory control samples. All soil percent recoveries were within control limits. No qualifiers were applied.

IX-Matrix Spike/Matrix Spike Duplicate

Form III, and chromatograms

Matrix spike/Matrix spike duplicates are evaluated to determine long-term precision and accuracy of the analytical method on various matrices. Specific criteria included: frequency (1 per 20 samples for each matrix), and percent recoveries and RPD within control criteria.

- Sample FT424-BE1 was analyzed as MS/MSD. MS/MSD recoveries were outside of control limits (78-138%) for pyrene (58, 57%). %RPD was outside of control limits (30%) for phenanthrene (34%). Since the MS/MSD samples were not validated and the laboratory control standards were within criteria, no qualifiers were applied based upon these outliers.

X-Quantitation Verification
Form 1, and chromatograms
The accuracy of analytical results were verified through the calculation of several parameters. All values were within 10%. Any value reported below the reporting limit and above the MDL should be considered as estimated.

Sample FT141-BE1 for anthracene,

conc. (ug/kg). = (Ax)*(Is)*(Vt)*(DF) / (Ais)*(Avg. RF)*(Ws)*(Vi)*(fraction solids), where:

Ax is the compound area
Ais is the corresponding internal standard area
Is is the corresponding internal standard concentration
Vt is the volume of total extract in milliliters
DF is the dilution factor
Avg. RF is the average relative response factor
Vi is the volume of the extract injected in microliters
Ws is the weight of sample extracted in grams.

= (32969)*(40)*(1000)*(20) / (516850)*(1.223)*(30.1)*(1.0)*(0.895) = 1550 ug/kg

Reported Value = 1550 ug/kg
% Difference = 0.0%

MEMORANDUM

TO: Fred Poli

FROM: Eric Malarek

SUBJECT: Fort Totten Data Validation – Volatiles in Soil
Severn Trent Laboratories, Inc.
Order # 001214

DATE: November 8, 2000

The purpose of this memorandum is to present the data validation report for the samples collected at Fort Totten during the September 12-14, 2000 sampling events. Samples were analyzed for volatile organic compounds (VOCs) using USEPA SW-846 Method 5030A/8260B. One soil sample was validated in this report. This sample was also analyzed at a dilution:

IT Sample ID	STL Lab ID
FT141SW3	0010288
FT141SW3RE	0010288RE
FT141SW3DL	0010288DL
FT137SW4	0010285
FT137SW4DL	0010285DL

Data were reviewed by Eric Malarek and validated using a combination of method-specific criteria, laboratory SOP, and the *USEPA Region II SOP for the Validation of Analytical Data Analyzed by USEPA SW-846 Method 8260B* (December 1997). Parameters evaluated are presented in Table 1. Data associated with parameters in compliance with quality control specifications have not been qualified. Data associated with parameters that did not comply with quality control specifications and directly impacted project data have been qualified in accordance with USEPA Region II specifications.

Table 1. Laboratory Performance Criteria

Qualified		Parameter
Yes	No	
	X	Holding Times
	X	Blank Analysis
	X	Instrument Performance Results
X		Initial Calibration
X		Continuing Calibration
X		System Monitoring Compounds
	X	Laboratory Control Spike
X		Internal Standards
	X	Matrix Spike and Matrix Spike Duplicate
X		Quantitation Verification

The quality of data collected in support of this sampling activity is considered acceptable with noted qualifications. Any compound exceeding the calibration range should not be used. The diluted samples should be used.

FORT TOTTEN VALIDATION REPORT
SOIL VOLATILES REVIEW
SDG 001214

I-Holding Times

Form I

Holding time criteria: preserved samples, Cool 4°C±2°C, 14 days from sample collection to analysis.

- Soil sample FT137SW4 was collected on 9/13/00 and soil sample FT141SW3 was collected on 9/14/00. Sample FT141SW3 was analyzed on 9/20/00. Samples FT141SW3RE and FT137SW4 were analyzed 9/21/00. The samples were re-analyzed as FT141SW3DL and FT137SW4DL on 9/22/00 due to dilution requirements. All criteria were met. No qualifiers were applied.

II-Blank Analysis

Forms I, IV, and chromatograms

Blanks were evaluated to determine the presence and magnitude of contamination problems resulting from field and laboratory activities. No trip blank was required for soil samples. No rinse blank was collected with the samples associated with this SDG.

- Table 2 summarizes the blank contamination study.

Table 2: Samples Affected Due to VOC Blank Contamination

Analysis Date	QC Blank ID	Compounds	Concentration (ug/kg)	Action Level	Sample qualified with "B"
9/20/00	VB009201 (VBLK01) VA1	None	NA	NA	None
9/21/00	VB009211 (VBLK02) VA1	None	NA	NA	None
9/21/00	VB009212 (VBLK03) VC3	None	NA	NA	None
9/22/00	VB009221 (VBLK04) VA1	None	NA	NA	None

III-Instrument Performance Check

Form V

The analysis of the instrument performance check solution must be performed at the beginning of each 12-hour period during which samples are analyzed. The instrument performance check, bromofluorobenzene (BFB), met the ion abundance criteria.

- All criteria were met. No qualification was applied.

IV-Initial Calibration

Form VI, and chromatograms

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for volatile target compounds. The percent relative standard deviation (%RSD) and the Relative Response Factor (RRF) should all fall within the control criteria of ≤30% and ≥0.1 for system performance check compounds (≥0.3 for PCA & chlorobenzene), and ≤15% and ≥0.05 for all other target compounds, respectively. If linear regression is used, the correlation coefficient should be >0.990.

- For soil initial calibration performed on 8/25/00 on instrument VA01, all target compounds reported on form 1s met criteria. No qualifiers were applied. Samples FT141SW3, FT141SW3RE, and FT137SW4 were analyzed using this initial calibration.

- For soil initial calibration performed on 9/12/00 on instrument VC03, MTBE (20.4%) and naphthalene (16.6%) were outside of established criteria. Sample FT141SW3DL and FT137SW4DL were analyzed using this initial calibration. For these compounds, all detects were qualified estimated "J" and non-detects "UJ".

V-Continuing Calibration
Form VII, and chromatograms
Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for volatile target compounds. The percent difference (%D) and the Relative Response Factor (RRF) should all fall within the control criteria of ≤20% and ≥0.05 for calibration check compounds and for all other target compounds. Continuing calibration standards containing both target compounds and surrogates were analyzed at the beginning of each 12-hour analysis.

- For soil continuing calibration performed on 8/25/00 @19:04 on instrument VA01, MTBE (99.8%; RRF 0.002) exceeded criteria among the requested target list. Samples FT141SW3, FT141SW3RE, and FT137SW4 were analyzed using another continuing calibration. No qualifiers were applied.

- For soil continuing calibration performed on 9/20/00 @10:32 on instrument VA01, all target compounds reported on form 1s met criteria. No qualifiers were applied. Sample FT141SW3 was analyzed using this continuing calibration.

- For soil continuing calibration performed on 9/21/00 @10:11 on instrument VA01, MTBE (21.7%) exceeded criteria among the requested target list. For this compound, the samples validated were qualified as estimated "J" for detects and non-detects "UJ". Samples FT141SW3RE and FT137SW4 were analyzed using this continuing calibration.

- For soil continuing calibration performed on 9/22/00 @07:58 on instrument VA01, all target compounds reported on form 1s met criteria. No qualifiers were applied. Samples FT141SW3RE and FT137SW4 were analyzed using this continuing calibration.

- For soil continuing calibration performed on 9/13/00 @01:32 on instrument VC03, all target compounds reported on form 1s met criteria. No qualifiers were applied.

- For soil continuing calibration performed on 9/21/00 @20:32 on instrument VC03, MTBE (22.0%) exceeded criteria among the requested target list. For this compound, the samples validated were qualified as estimated "J" for detects and non-detects "UJ". Samples FT141SW3DL and FT137SW4DL were analyzed using this continuing calibration.

VI-System Monitoring Compound (Surrogates)
Form II, and chromatograms
Laboratory performance on individual samples is evaluated through the review of surrogate spike samples. The surrogates and recovery ranges are:

Dibromofluoromethane	(79-122%)
1,2-dichloroethane-d4	(70-119%)
Toluene-d8	(82-114%)
Bromofluorobenzene	(76-121%)

- Surrogates dibromofluoromethane (149%), toluene-d8 (19%), and bromofluorobenzene (38%) were outside of control limits for sample FT141SW3. All detects were qualified estimated "J" and non-detects "UJ".

- Surrogates dibromofluoromethane (147%) and toluene-d8 (156%) were outside of control limits for sample FT141SW3RE. All detects were qualified estimated "J" and non-detects "UJ".

- Surrogates dibromofluoromethane (139%) and toluene-d8 (68%) were outside of control limits for sample FT137SW4. All detects were qualified estimated "J" and non-detects "UJ".

- Surrogate dibromofluoromethane (131%) was outside of limits for sample FT137SW4DL due to dilutions. No qualifiers were applied based upon this outlier.

- Surrogates dibromofluoromethane (198%) and 1,2-dichloroethane-d4 (125%) were outside of control limits for sample FT141SW3DL due to dilutions. No qualifiers were applied based upon this outlier.

VII-Laboratory Control Spike
chromatograms
Laboratory control spike is evaluated to determine accuracy of the analytical method on various matrices. Specific criteria included: frequency (1 per 20 samples for each matrix), and percent RPD within control criteria.

- Samples VL009201, VL009211, VL009212, and VL009221 were used as the laboratory control samples. All soil percent recoveries were within control limits. No qualifier was applied.

VIII-Internal Standards (IS)
Form VIII, and chromatograms
Internal standards performance criteria ensure that GC/MS sensitivity and response are stable during every analytical run. Specific criteria include: area counts (-50% to +100%) of the associated calibration standard, and retention time (± 30 seconds) from that of the associated calibration standard. Table 3 identifies the associated reported compounds to the internal standard used.

Table 3 Internal Standard and Target Compound Breakdown Summary

Internal Standard	Associated Target Compounds Reported
pentafluorobenzene	methyl-tert-butylether, benzene
1,4-difluorobenzene	None
Chlorobenzene-d5	Toluene, Ethylbenzene, m,p-xylene, o-xylene, isopropylbenzene
1,4-dichlorobenzene-d4	n-propylbenzene, 1,3,5-trimethylbenzene, tert-butylbenzene, 1,2,4-trimethylbenzene, sec-butylbenzene, p-isopropyltoluene, n-butylbenzene, naphthalene

- For sample FT141SW3, internal standard exceeded control limits for chlorobenzene-d5 and 1,4-dichlorobenzene-d4. All associated compounds with positive detects were qualified estimated "J" and non-detects qualified "UJ".

- For sample FT141SW3RE, internal standard exceeded control limits for pentafluorobenzene, 1,4-difluorobenzene, chlorobenzene-d5, and 1,4-dichlorobenzene-d4. All associated compounds with positive detects were qualified estimated "J" and non-detects qualified "UJ".

IX-Matrix Spike/Matrix Spike Duplicate

Form III, and chromatograms

Matrix spike/Matrix spike duplicates are evaluated to determine long-term precision and accuracy of the analytical method on various matrices. Specific criteria included: frequency (1 per 20 samples for each matrix), and percent RPD within control criteria.

- Sample FT141SW4, FT424SW2, FT137SW1, and FT141BE2DL were analyzed as MS/MSD. Toluene was outside limits (89-130%) for samples FT137SW1 (136, 140)% and FT141BE2DL (133%). Benzene was outside limits (90-128%) for sample FT141BE2DL (138, 167%). These compounds were qualified "J" for detects and "UJ" for non-detects.

X-Quantitation Verification

Form 1, and chromatograms

The accuracy of analytical results were verified through the calculation of several parameters. The percent difference between the calculated and reported values should be ≤10%. Any compound above calibration range should not be used and was qualified "R". The diluted samples should be used.

Sample FT137SW4DL for 1,3,5-trimethylbenzene,

Reported concentration = 420 μg/kg

conc (μg/kg) = Ax*Is*DF*Ve*Vf/Ais*RRF*Ws*Vi*FS

Where
Ax = the compound area
Ais = the corresponding internal standard area
Is = the corresponding internal standard concentration (ng/mL)
DF = the dilution factor
RRF = the relative response factor
Ve = Volume extracted (mL)
Vf = Volume final (mL)
Vi = Volume injected (mL)
Ws = Weight of the sample (g)
FS = Percent Solids as a fraction

conc (μg/kg) = (17486)*(50ng/mL)*(1)*(10mL)*(5ml)/(1044737)*(0.301)*(4.0g)*(0.1 ml)*(0.82)
= 420 μg/kg

%D = 0.0%
Values were within 10% difference.

MEMORANDUM

TO: Fred Poli

FROM: Eric Malarek

SUBJECT: Fort Totten Data Validation – Semivolatiles in Soil
Severn Trent Laboratories, Inc.
Order # 001214

DATE: November 1, 2000

The purpose of this memorandum is to present the data validation report for the samples collected at Fort Totten during the September 12-14, 2000 sampling events. Samples were analyzed for semivolatile organic compounds (SVOCs) using USEPA SW-846 Method 8270C. Two soil samples were validated in this report. These samples were also analyzed at a dilution:

IT Sample ID	STL Lab ID
FT141SW3	0010288
FT141SW3DL	0010288DL
FT137SW4	0010285
FT137SW4DL	0010285DL

Data were reviewed by Eric Malarek and validated using a combination of method-specific criteria, laboratory SOP, and the *USEPA Region II SOP for Validation of SW-846 Method 8270B* (February, 1995). Parameters evaluated are presented in Table 1. Data associated with parameters in compliance with quality control specifications have not been qualified. Data associated with parameters that did not comply with quality control specifications and directly impacted project data have been qualified in accordance with USEPA Region II specifications.

Table 1. Laboratory Performance Criteria

Qualified		Parameter
Yes	No	
	X	Holding Times
	X	Blank Analysis
	X	Instrument Performance Results
	X	Initial Calibration
	X	Continuing Calibration
	X	System Monitoring Compounds
X		Internal Standards
	X	Laboratory Control Standard
	X	Matrix Spike/Matrix Spike Duplicate
X		Quantitation Verification

The quality of data collected in support of this sampling activity is considered acceptable with noted qualifications. Any compound exceeding the calibration range should not be used. The diluted samples should be used.

FORT TOTTEN VALIDATION REPORT
SOIL SEMI-VOLATILES REVIEW
SDG 001214

I-Holding Times

Form I

Holding time criteria: preserved samples, Cool 4°C±2°C, 14 days from sample collection to extraction and 40 days from extraction to analysis.

- Soil sample FT137SW4 was collected on 9/13/00 and soil sample FT141SW3 was collected on 9/14/00. Both samples were extracted on 9/18/00. Samples FT137SW4 was analyzed 9/29/00. Sample FT137SW4DL was analyzed on 9/26/00. Samples FT141SW3 and FT141SW3DL were analyzed 9/23/00. All criteria were met. No qualifiers were applied.

II-Blank Analysis

Forms I, IV, and chromatograms

Blanks were evaluated to determine the presence and magnitude of contamination problems resulting from field and laboratory activities. No rinse blank was collected with samples associated with this SDG.

- Table 2 summarizes the blank contamination and qualifications. No qualifications were required due to blank criteria.

Table 2 Samples Affected Due to SVOC Blank Contamination

Instrument ID	Analysis Date	QC Blank ID	Compounds	Conc. (ug/kg)	Action Level (ug/kg)	Samples qualified with "B"
SC3	9/22/00	SB009181	None	None	None	None

III-Instrument Performance Check

Form V, chromatograms

The analysis of the instrument performance check solution must be performed at the beginning of each 12-hour period during which samples are analyzed.

- The instrument performance check, decafluorotriphenylphosphine (DFTPP), met the ion abundance criteria. No qualification was applied.

IV-Initial Calibration

Form VI, chromatograms

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for semivolatile target compounds. All percent relative standard deviations should be less than 30% for CCCs and 15% for other compounds. The relative response factors should be greater than 0.05. If linear regression is used, the correlation coefficient should be >0.990.

- For calibration performed on 9/22/00 on instrument SC3, all reported compounds were within specified criteria. No qualifiers were applied. All samples were analyzed using this initial calibration.

V-Continuing Calibration

Form VII, and chromatograms

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument used was capable of producing acceptable qualitative and quantitative data for semi-volatile target compounds. Continuing calibration standards containing both target compounds and surrogates were analyzed at the beginning of each 12-hour analysis. All percent differences should be less than 20%.

- For the continuing calibration performed on 9/22/00 @16:39 on instrument SC3, all criteria were met for reported compounds. The samples were analyzed using another continuing calibration. No qualifiers were applied.

- For the continuing calibration performed on 9/23/00 @13:36 on instrument SC3, all criteria were met for reported compounds. Samples FT141SW3 and FT141SW3DL were analyzed using this continuing calibration. No qualifiers were applied.

- For the continuing calibration performed on 9/26/00 @10:38 on instrument SC3, all criteria were met for reported compounds. Sample FT137SW4DL was analyzed using this continuing calibration. No qualifiers were applied.

- For the continuing calibration performed on 9/29/00 @09:33 on instrument SC3, all criteria were met for reported compounds. Sample FT137SW4 was analyzed using this continuing calibration. No qualifiers were applied.

VI-Surrogate Spikes

Form II, and chromatograms

Laboratory performance on individual samples is evaluated through the review of surrogate spike samples. The surrogates and recovery ranges are:

Nitrobenzene-d5	(43-107%)
2-Fluorobiphenyl	(53-110%)
Terphenyl-d14	(56-110%)

- For samples FT141SW3 and FT137SW4, all surrogates were within control limits. No qualifiers were applied. For samples FT137SW4DL and FT141SW3DL, surrogates were diluted out. No qualifiers were applied based on these outliers.

VII-Internal Standards (IS)

Form VIII, and chromatograms

Internal standards performance criteria ensure that GC/MS sensitivity and response are stable during every analytical run. Specific criteria include: area counts (-50% to +100%) of the associated calibration standard, and retention time (± 30 seconds) from that of the associated calibration standard. Table 3 identifies the associated reported compounds to the internal standard used.

Table 3 Internal Standard and Target Compound Breakdown Summary

Internal Standard	Associated Target Compounds Reported
d4-1,4-dichlorobenzene	none
d8-naphthalene	naphthalene
d10-acenaphthene	acenaphthene, fluorene
d10-phenanthrene	phenanthrene, anthracene, fluoranthene
d12-chrysene	pyrene, benzo(a)anthracene, chrysene
d12-perylene	benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene, benzo(g,h,i)perylene

- For sample FT141SW3 internal standard was below –50% window for d4-1,4-dichlorobenzene (IS1), d8-naphthalene (IS2), d10-acenaphthene (IS3), and d10-phenanthrene (IS4). All associated compounds with positive detects were qualified estimated "J" and non-detects qualified "UJ".

- For sample FT141SW3DL internal standard was below –50% window for d12-perylene (IS6). All associated compounds with positive detects were qualified estimated "J" and non-detects qualified "UJ".

- For sample FT137SW4DL, all criteria were met. No qualifiers were applied.

- For sample FT137SW4 internal standard was below –50% window for d10-acenaphthene (IS3) and d10-phenanthrene (IS4). All associated compounds with positive detects were qualified estimated "J" and non-detects qualified "UJ".

VIII-Laboratory Control Standard (LCS)

LCSs are used to monitor laboratory accuracy by calculating the percent recoveries of the spiked compounds.

- Sample SL009181 was used as the laboratory control sample. All soil percent recoveries were within control limits. No qualifiers were applied.

IX-Matrix Spike/Matrix Spike Duplicate

Form III, and chromatograms

Matrix spike/Matrix spike duplicates are evaluated to determine long-term precision and accuracy of the analytical method on various matrices. Specific criteria included: frequency (1 per 20 samples for each matrix), and percent recoveries and RPD within control criteria.

- Sample FT141SW4 was analyzed as MS/MSD. MS/MSD recoveries were within control limits for spiked compounds. No qualifiers were applied.

X-Quantitation Verification

Form 1, and chromatograms

The accuracy of analytical results were verified through the calculation of several parameters. All values were within 10%. Any value reported below the reporting limit and above the MDL should be considered as estimated "J". Any compound above calibration range should not be used and was qualified "R". The diluted samples should be used.

Sample FT137SW4DL for naphthalene,

conc. (ug/kg). = (Ax)*(Is)*(Vt)*(DF) / (Ais)*(Avg. RF)*(Ws)*(Vi)*(fraction solids)

where:

Ax is the compound area
Ais is the corresponding internal standard area
Is is the corresponding internal standard concentration (ng)
Vt is the volume of total extract (mL)
DF is the dilution factor
Avg. RF is the average relative response factor
Vi is the volume of the extract injected (uL)
Ws is the weight of sample extracted (g).

= (507075)*(40 ng)*(1000 mL)*(8) / (1033231)*(0.851)*(29.4 g)*(1.0 uL)*(0.82) = 7700 ug/kg

Reported Value = 7700 ug/kg
% Difference = 0.0%

APPENDIX B

NYSDEC STARS Memo #1 Soil Guidance

Spill
Technology
And
Remediation
Series

STARS Memo #1
Petroleum-Contaminated Soil Guidance Policy

Prepared by:
New York State Department of Environmental Conservation
Division of Spills Management

August 1992
(Reprinted July 1993)

NEW YORK STATE PETROLEUM-CONTAMINATED SOIL GUIDANCE

Table of Contents

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SECTION I
PURPOSE AND APPLICABILITY

The goal at each petroleum spill site is to remove the spilled petroleum product from the soil in the most efficient and safe manner in order that the soil may be returned to a reusable product. When complete removal is not possible, practical, or cost effective, the objective is to remediate the contaminated media to concentration levels which will protect groundwater, human health and the environment.

The Petroleum-Contaminated Soil Guidance Policy is intended to provide direction on the handling, disposal and/or reuse of non-hazardous petroleum-contaminated soils. The reuse or disposal options for excavated soils vary depending on the level of treatment provided consistent with protecting the public health and the environment. While this document does not establish standards, it is intended as guidance in determining whether soils have been contaminated to levels which require investigation and remediation.

This document also constitutes a determination of beneficial use by the Department, as defined in Solid Waste Regulation NYCRR Part 360. Petroleum-contaminated soil, if determined to satisfy the criteria herein, can be reused or disposed of as directed in this guidance. Therefore, soils which meet beneficial use conditions are no longer a solid waste in accordance with NYCRR Part 360-1.2(a)(4).

This guidance is intended for Regional Spill Investigators, Regional Solid Waste staff and responsible parties to assist them in determining the acceptability of remedial activities at a petroleum spill site or in determining the acceptability of a site assessment. It may be applied to both excavated and non-excavated material. The evaluation method and guidance values included in this guidance may be used to determine the limits of contamination, such as defining the extent of contamination in an excavation which contains contaminated material. Situations may exist where results of sampling analysis will require interpretations or subjective judgement, as with certain nuisance characteristics such as odors. These interpretations and judgements will be made solely by the DEC representative on site. There may be instances where the DEC will opt to digress from this guidance to establish cleanup goals reflecting site-specific circumstances at a particular petroleum spill site.

The guidance may also be used by responsible parties to develop corrective action plans which will achieve the criteria set forth in this document.

Robert G. Hampston Director Division of Construction Management	Norman H. Nosenchuck Director Division of Solid Waste

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SECTION II

HAZARDOUS WASTE DETERMINATION

An initial determination[1] must be made on all excavated petroleum-contaminated soil as to whether or not it is a hazardous waste. The hazardous waste determination typically involves laboratory analysis to quantify contaminant concentrations in the waste material. The DEC and EPA regulations, however, allow the generator of the waste to use knowledge of the waste and/or laboratory analysis to make a hazardous waste determination. Petroleum-contaminated soils are generally stored on site while laboratory analysis results are obtained and evaluated. As long as the material is segregated from the environment by impervious material, such as polyethylene sheeting, the petroleum-contaminated soil may remain on site until appropriate laboratory results are available and interpreted.

A petroleum-contaminated soil is considered a characteristic hazardous waste when it exhibits any of the following characteristics: ignitability, corrosivity, reactivity, or toxicity, as defined in 6NYCRR Part 371, Section 371.3, or 40 CFR Section 261. Knowledge of soils contaminated with virgin petroleum products indicates that those waste materials do not demonstrate ignitability, corrosivity, or reactivity characteristics. Therefore, the only characteristic of concern for virgin petroleum-contaminated soil is toxicity. The Toxicity Characteristic (TC) Rule identifies benzene and lead as compounds which may cause petroleum-contaminated waste to be hazardous. Analysis of additional parameters may be necessary for petroleum-contaminated soil located at sites where other contaminants may be present. Refer to Appendix A for more specific information regarding the procedures for hazardous waste determination, and the TC Rule regulatory levels.

If the contaminated soil has been excavated and if the hazardous waste criteria apply, then the contaminated soil is classified as a hazardous waste. Excavated soil which is hazardous due to any non-petroleum component will be referred to the Division of Hazardous Waste Remediation, and the Division of Hazardous Substances Regulation to determine appropriate remedial actions.

If in-situ soil is contaminated by a petroleum product, and if the above hazardous waste criteria are met, the site will be remediated under the direction of the Bureau of Spill Prevention and Response to provide for protection of human health and environmental quality. In-situ soil, which violates any of the hazardous waste criteria due to any non-petroleum component, will be referred to the Division of Hazardous Waste Remediation, and the Division of Hazardous Substances Regulation to determine appropriate remedial actions.

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[1] In-situ or excavated soils which could contain contaminants other than petroleum products, by virtue of laboratory analysis, site history, visual observations, etc., will be sampled and analyzed by either the responsible party or by the Bureau of Spill Prevention and Response (BSPR). The Division of Hazardous Substances Regulation (DHSR) will provide assistance to BSPR staff (for state-funded projects) and responsible parties in making hazardous waste determinations for their generated waste.

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SECTION III

SOIL CLEANUP GUIDELINES

There are four essential guidelines which must be satisfied in order for soil to be considered acceptably remediated or not sufficiently contaminated. These are: A) protection of the groundwater; B) protection of human health; C) protection of fish and wildlife and the environment in which they live; and D) protection against objectionable nuisance characteristics. Compliance with these guidelines is satisfied by analysis of soil samples for contaminant concentrations and leachability, and subsequent comparison of the sampling results to guidance values, values which have been determined to be acceptable by DEC.

Contaminant concentrations are determined using EPA standard Methods 8021 or 8270. Leachability is determined using a procedure known as the Toxicity Characteristic Leaching Procedure (TCLP). Satisfactory protection of groundwater is indicated by TCLP Extraction Guidance Values or by TCLP Alternative Guidance Values. Satisfactory protection of human health is indicated by Human Health Guidance Values. Satisfactory protection of water body sediment is indicated by Sediment Guidance Values. Finally, satisfactory protection against objectionable nuisance characteristics is indicated by the lack of odor and by each contaminant concentration being less than 10,000 ppb. Tables 1 and 2 in Section VIII list the contaminants of concern and their corresponding guidance values for acceptable soil concentrations for components of gasoline and fuel oil, respectively. Analysis of additional parameters may be necessary for petroleum-contaminated soil located at sites where other contaminants may be present.

The procedures used when evaluating soil samples to satisfy these guidelines are discussed further in this section.

A. Protection of Groundwater

The presence of a contaminant in the soil does not determine its potential for groundwater contamination. Soil particles can adsorb contaminants which will not be released through infiltration and groundwater recharge mechanisms. Therefore, it is the leachability of the soil which must be measured. To be protective of groundwater quality, the soil must not leach contaminants to the groundwater at concentrations which violate groundwater standards. The **Toxicity Characteristic Leaching Procedure (TCLP)** has been accepted by the Department[2] as a method of determining leachability of petroleum-contaminated soil.

The Toxicity Characteristic Leaching Procedure (TCLP) is an extraction process designed to address the leaching potential of organic and inorganic contaminants. It is used to simulate the actual site-specific leaching potential of individual contaminants present in the soil. In the extraction process, the soil sample is mixed with an acid solution and shaken for approximately eighteen

[2]Accepted by NYSDEC Cleanup Standards Task Force.

hours. For non-volatile organic and inorganic compounds, the soil/acid solution is filtered to produce an extract liquid. For volatile organic compounds, the soil/acid solution is held in a Zero Headspace Extractor (ZHE), preventing the escape of volatile organics, and a liquid extract is squeezed out of the soil/acid solution. The extracted liquid is then analyzed to determine the concentration of the petroleum compounds in question. If the concentrations in the extract are less than or equal to the groundwater standards, then the soil may be considered environmentally acceptable for groundwater protection. Tables 1 and 2 in Appendix B identify the TCLP Extraction Guidance Values for the primary components of gasoline and fuel oil. The tabulated TCLP Extraction Guidance Values are equal to the NYSDEC groundwater standards or the NYSDOH drinking water standards, whichever is more stringent.

An alternative approach to the actual extraction process of the TCLP laboratory procedure which may be a cost-saving shortcut is to evaluate the concentration of the contaminant in the soil and mathematically determine if it will satisfy the leachate criteria. The TCLP laboratory procedure requires the soil sample to be diluted by a ratio of 20:1 when preparing the sample for the acidic extraction, and subsequent leachate analysis. Assuming that the entire mass of the contaminants present in the soil will leach out during the extraction process, the dilution factor of 20 can be applied to the actual soil contaminant concentration to give a maximum possible contaminant concentration obtainable in the leachate.

If a contaminant concentration in the soil is known, then the maximum possible contaminant concentration in the TCLP extract can be determined by the following equation:

$$\left[\begin{array}{l}\text{Contaminant}\\ \text{Concentration}\\ \text{in Soil}\\ \text{(ug/kg or ppb)}\end{array}\right] \div 20 = \left[\begin{array}{l}\text{Maximum Possible}\\ \text{Contaminant}\\ \text{Concentration}\\ \text{in Extract}\\ \text{Liquid (ug/l or ppb)}\end{array}\right]$$

If the maximum possible contaminant concentration in the extract liquid, as determined by the above equation, is less than or equal to the contaminant's TCLP Extraction Guidance Value, then the contaminant satisfies the groundwater quality protection criterion. If the calculated maximum possible contaminant concentration in the extract liquid is greater than the TCLP Extraction Guidance Value, then no conclusion can be drawn and groundwater quality protection must be confirmed by actually performing the TCLP extraction for that contaminant.

Example:

If the total concentration of Toluene in the soil as determined by Method 8021 is 100 ug/kg or 100 ppb for Sample A and 140 ug/kg or 140 ppb for

Sample B, and the groundwater standard is 5 ppb then:

Sample A is: 100 ug/kg ÷ 20 = 5 ug/l = 5 ppb
Sample B is: 140 ug/kg ÷ 20 = 7 ug/l > 5 ppb

Sample A is considered to have satisfied groundwater protection by the TCLP extraction test for Toluene at 5 ppb. In Sample B, the calculated extract value is greater than 5 ug/l, therefore, no conclusion can be drawn from the calculation, and an actual TCLP extraction test must be performed.

To simplify this alternative approach, TCLP Alternative Guidance Values, which are equal to 20 times the TCLP Extraction Guidance Values, have been included in Tables 1 and 2. Therefore, if a contaminant's soil concentration is known, it can simply be compared to the TCLP Alternative Guidance Values.

The above methodology can also be used to make the hazardous waste determination, with the soil or sediment concentration compared to the respective hazardous waste limit for the leachate. A considerable decrease in analytical costs may be realized if the above equation is used to evaluate contaminant concentration acceptability.

In summary, if the contaminant concentrations in the soil are less than or equal to the TCLP Alternative Guidance Values, <u>or</u> if the contaminant concentrations in the soil extract are less than or equal to the TCLP Extraction Guidance Values, then the soil <u>is</u> considered environmentally acceptable for groundwater quality protection.

B. Protection of Human Health

Protection of human health is an essential requirement of both treatment and reuse of petroleum-contaminated soil. EPA has published health-based standards for many contaminants in soil. The standards are contained in the Health Effects Assessment Summary Table (HEAST REPORT). These standards were derived from methodologies based on soil ingestion values for carcinogens and systemic toxicants.

The appropriate health-based soil Guidance Values are listed in Tables 1 and 2 for the primary components of gasoline and fuel oil.

If the contaminant concentrations in the soil are less than or equal to the Human Health Guidance Values, then the soil is considered safe for human health concerns.

C. Protection of Fish and Wildlife

Protection of fish and wildlife must be satisfied when dealing with contaminated sediment. Some Sediment Guidance Values for protection of aquatic life and animals which consume aquatic life, have been developed and are noted in Tables 1 and 2. Where sediments are contaminated, these Guidance Values should be used. The appropriate natural resource division (eg. Marine, Fish & Wildlife, etc.) should be contacted for situations involving sediment contaminants which do not have tabulated Sediment Guidance Values. If a spill has occurred at a location that may be sensitive to wildlife (eg. wetlands), the Division of Fish and Wildlife should be consulted to determine whether the soil cleanup levels are adequate for natural resource protection.

If the contaminant concentrations in the sediment are less than or equal to the tabulated Sediment Guidance Values, then the sediment is considered environmentally acceptable for fish and wildlife concerns.

D. Protection Against Objectionable Nuisance Characteristics

Petroleum-contaminated soil must not exhibit objectionable nuisance characteristics to be eligible for some reuse options described later in this guidance and listed in Table 3.

1) Petroleum-Type Odors

The soil must not exhibit any discernible petroleum-type odors in order to be considered for the reuse options identified later in this guidance. Odor determinations for state-funded spill projects will be made by the Regional Spill Investigator. Odor determinations for responsible party (RP) sites are the responsibility of the RP. The Regional Spill Investigator may or may not be available to assess the odor criteria at all sites. When the Regional Spill Investigator is on-site, he/she may override the decision of the RP if, in the investigator's opinion, sufficient odors still persist. Determinations by DEC Spill Investigators do not relinquish a responsible party's responsibilities or liabilities under the law.

2) Contaminant Concentrations

The soil shall not contain any contaminant at a concentration above **10,000 ug/kg (10,000 ppb).** This maximum individual contaminant concentration should support the above odor determination, since some petroleum constituents will not leach at high concentrations but may exhibit odors.

If the soil does not exhibit petroleum-type odors and does not contain any individual contaminant at greater than 10,000 ppb, then the soil is considered acceptable for nuisance characteristics.

SECTION IV

GUIDANCE VALUES

A. Gasoline-Contaminated Soils

Table 1 lists the primary gasoline components of concern. The table identifies the compound names, the preferred EPA laboratory methods for determining contaminant concentration, the detection limits for a liquid matrix (water), the detection limits for a solid matrix (soil), the TCLP Extraction Guidance Values (C_w), the TCLP Alternative Guidance Values (C_a), the Human Health Guidance Values (C_h), and the Sediment Guidance Values (C_s).

Although EPA Method 8021 is preferred, other laboratory methods may be used with prior approval from the DEC Regional Spill Investigator. Other proposed methods should be evaluated on their ability to quantify the compounds of concern at acceptable detection levels.

The tabulated detection limits are the practical quantitation limits (PQLs). The PQL is the lowest level that can be measured within specified limits of precision during routine laboratory operations on most matrices. Efforts should be made to obtain the best detection possible when selecting a laboratory.

To demonstrate groundwater quality protection via the TCLP Extraction Method, the concentration of the hydrocarbon compound in the TCLP extract, as determined by EPA Method 8021 for a liquid matrix, must be less than or equal to the TCLP Extraction Guidance Value, C_w.

-or-

To demonstrate groundwater quality protection via the TCLP Alternative Method, the concentration of the hydrocarbon compound in the soil, as determined by EPA Method 8021 for a solid matrix, must be less than or equal to the TCLP Alternative Guidance Value, C_a.

To demonstrate human health protection, the concentration of the hydrocarbon compound in the soil, as determined by EPA Method 8021 for a solid matrix, must be less than or equal to the Human Health Guidance Value, C_h.

To demonstrate fish and wildlife protection, the concentration of the hydrocarbon compound in the soil, as determined by EPA Method 8021 for a solid matrix, must be less than or equal to the Sediment Guidance Value C_s. Meeting this requirement is only necessary when dealing with contaminated sediment.

To demonstrate nuisance protection, the soil must not exhibit petroleum-type odors, and must not contain any contaminant at greater than 10,000 ppb, as determined by EPA Method 8021 for a solid matrix.

When the Guidance Value or standard is below the detection limit, achieving the detection limit will be considered acceptable for meeting the Guidance Value or standard, as long as the reported laboratory detection limits are reasonably close to the listed PQLs.

B. Fuel Oil-Contaminated Soil

Table 2 lists the primary fuel oil components of concern. As with Table 1, Table 2 identifies compound names, preferred EPA laboratory methods, detection limits, and Guidance Values.

Although EPA Methods 8021 and 8270 are preferred for identifying compounds of concern for gasoline and fuel oil, other laboratory methods may be used with prior approval from the DEC Regional Spill Investigator. Other proposed methods should be evaluated on their ability to quantify the compounds of interest at acceptable detection levels.

Since there is no single laboratory method which will analyze for all of the volatile and semi-volatile compounds of concern, it is generally necessary to use more than one laboratory method for fuel oil analysis. Both volatile and semi-volatile compounds must be addressed initially, but a reduced list of analytes may be acceptable for subsequent sampling depending upon the initial results.

As with Table 1, the detection limits in Table 2 are PQLs. Efforts should be made to obtain the best detection possible when selecting a laboratory.

Experience has shown that soil containing some of the insoluble semi-volatile compounds at high concentrations can exhibit a distinct odor even though the substances will not leach from the soil. Therefore, the maximum individual contaminant concentration of 10,000 ppb is instituted to help address this problem. In addition, anytime a soil exhibits discernible petroleum odors, even if it has met the numerical criteria, it shall not be considered clean enough for some reuse options under 6NYCRR Part 360, as described later in this document.

Odor determination is subjective. Since there is no recognized odor measuring device, some discrepancies may arise between responsible parties and the DEC on this subject. In order to document odor determinations and to address the need for remediation due to odors, the following approaches may be considered: (1) direct the laboratory to identify and quantify all pollutants present in the soil and/or leachate samples instead of just the method's target compounds; and (2) establish site-specific conditions based on an evaluation of the characteristics of the site. The determination and evaluation of odors remains a subject requiring further research and policy development.

Some of the semi-volatiles are carcinogens, and subsequently have groundwater quality Guidance Values of 0.002 ppb. The TCLP Extraction Guidance Values are 0.002 ppb, and the TCLP Alternative Guidance Values are 0.04 ppb. The solid matrix detection limit does not approach this low value. Therefore, when these compounds are determined to be present, the TCLP Extraction Method and the Alternative Guidance Values must be satisfied to demonstrate groundwater quality protection for these particular contaminants. The following compounds listed in Table 2 are affected by this limitation: benzo(a)anthracene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; chrysene; benzo(ghi)perylene; and indeno(1,2,3-cd)pyrene.

Particular attention should be paid to the Human Health Guidance Values for fuel oil-contaminated soil. While the majority of the semi-volatiles have health Guidance Values considerably higher than the contaminant concentration generally encountered at spill sites, there are seven compounds listed in Table 2 which have Human Health Guidance Values lower than the detection limits. When any of these compounds (benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and dibenz(a,h)anthracene) are present, the Human Health Guidance Value most likely will be the limiting factor for achieving acceptable cleanup levels.

To demonstrate groundwater quality protection via the TCLP Extraction Method, the concentrations of the hydrocarbon compounds in the TCLP extract, as determined by EPA Methods 8021 and 8270 Base/Neutral for a <u>liquid matrix</u>, must be less than or equal to the TCLP Extraction Guidance Value, C_w;

-or-

To demonstrate groundwater quality protection via the TCLP Alternative Method, the concentrations of the hydrocarbon compounds in the soil, as determined by EPA Methods 8021 and 8270 Base/Neutral for a <u>solid matrix</u>, must be less than or equal to the TCLP Alternative Guidance Value, C_a. As described above, the TCLP Alternative Method is not a sufficient demonstration of groundwater protection for some contaminants.

To demonstrate human health protection, the concentrations of the hydrocarbon compounds in the soil, as determined by EPA Methods 8021 and 8270 Base/Neutral for a <u>solid matrix</u>, must be less than or equal to the Human Health Guidance Value, C_h.

To demonstrate fish and wildlife protection, the concentrations of the hydrocarbon compounds in the soil, as determined by EPA Methods 8021 and 8270 Base/Neutral for a <u>solid matrix</u>, must be less than or equal to the Sediment Guidance Value, C_s. Meeting this requirement is only necessary when dealing with contaminated sediment.

To demonstrate nuisance protection, the soil must not exhibit petroleum-type odors, and must not contain any contaminant at greater than 10,000 ppb, as determined by EPA Methods 8021 and 8270 Base/Neutral for a solid matrix.

When the Guidance Value or standard is below the detection limit, achieving the detection limit will be considered acceptable for meeting the Guidance Value or standard, as long as the reported laboratory detection limits are reasonably close to the listed PQLs.

SECTION V

LABORATORY ANALYSIS

There are a variety of laboratory methods, established by the USEPA and the NYS Department of Health (DOH), which can be used to analyze petroleum-contaminated soils. The selection of appropriate laboratory methods depends on the compounds of concern, the detection limits for each compound, the nature of the samples to be analyzed, the capabilities of the laboratory, and the regulatory limits or Guidance Values to be achieved. The methods recommended and most often used for petroleum-contaminated soils are EPA Standard Methods 8021, 8270 (Base/Neutrals) and the TCLP extraction process. In every case, the NYSDEC will evaluate laboratory results from NYSDOH-approved laboratories only.

Each laboratory method identifies compounds which can be quantified with an acceptable degree of precision and accuracy. Many laboratory methods have petroleum compounds as target compounds, along with non-petroleum compounds. Method 8270, for example, identifies acid extractable hydrocarbons and base/neutral extractable hydrocarbons. The semi-volatile constituents of petroleum products are a sub-set of the base/neutral extractable compounds under Method 8270. Therefore, when requesting this analysis, base/neutrals only should be specified.

Some laboratories may be able to quantify non-target compounds of concern with particular methods. For example, there is no laboratory method which lists MTBE (methyl t-butyl ether) as a target compound; however, laboratories can include MTBE in their analysis using Method 8021. Therefore, when requesting this analysis, Method 8021 plus MTBE should be specified.

Each laboratory method establishes minimum concentrations of the target compounds which can be detected under ideal conditions using that particular procedure. These Method Detection Limits (MDLs) are rarely achievable under actual conditions in an analytical laboratory. Laboratories report their actual detection limits as Practical Quantitation Limits (PQLs). The PQLs for analysis on a liquid matrix are generally four times the MDLs. With a solid matrix, the PQLs will be affected by the quantity of contamination present, categorized as low, medium or high concentrations. Lower PQLs are generally possible with low level soil contamination. Laboratories must identify their PQLs when reporting analytical results.

Laboratories and methods to be utilized should be selected according to the best detection possible for the compounds of interest, and the regulatory or guidance levels needed to be achieved. For example, Table 2 indicates that naphthalene is a target compound for Method 8021 and Method 8270. Both of these methods can provide detection levels in a liquid matrix below the TCLP Extraction Guidance Value of 10 ppb. Therefore, either method could be used for analysis of a liquid matrix of naphthalene. However, for a solid matrix, Method 8021 is capable of providing much better detection of naphthalene than Method 8270. If the soil concentrations for naphthalene will be compared to the TCLP Alternative Guidance Value of 200 ppb, then Method 8021 should be used instead of Method 8270. If the soil concentrations for naphthalene will be compared only with the nuisance protection level of 10,000 ppb, or the Human Health Guidance Value of 300,000 ppb, then both Method 8021 and Method 8270 are capable of providing satisfactory detection levels for naphthalene.

Initial laboratory analysis should address the full range of compounds which may be present, considering the petroleum products involved. In consideration of prior laboratory results, potential contaminants may be eliminated from subsequent sampling analysis lists. As the contaminants are identified or eliminated, it may be appropriate to change laboratory methods during a project, to avoid unnecessary laboratory expenses. In addition, it may be appropriate to discuss analytical work with the laboratory in terms of the actual compounds of interest rather than method numbers and their defined target compounds. The final laboratory results for a project, however, should address the same full range of compounds as the initial sampling results, to confirm that the interim results did not overlook the appearance of other compounds. For example, gasoline-contaminated soil which is undergoing on-site bioremediation should be analyzed initially using Method 8021 plus MTBE. If only benzene, toluene, ethyl benzene and xylenes are detected, then Method 8020 could be used for interim sampling events. Upon completion of the bioremediation project, the soil should be analyzed using Method 8021 plus MTBE, to demonstrate the satisfaction of the Guidance Values applicable to the selected reuse option.

A detailed description of analytical protocols and procedures is available in the DEC Sampling Guidelines and Protocols manual.

SECTION VI

SAMPLING

Samples should be collected in such a manner so as to best characterize the extent of contamination of the soil in question. There is no specific number or type of samples which will apply to all situations and best engineering judgement will have to be used. The type of sample, grab or composite, will vary depending upon the constituent being identified. While grab samples come from one location, composites come from several locations and are joined to form one sample. When volatiles are in question, care must be taken when collecting composite samples to minimize the loss of volatiles during handling. In order to minimize handling of volatiles, several grab samples are preferred, with confirmatory composite samples. When sampling for semi-volatiles, several composite samples are preferred, with confirmatory grab samples.

The treatment process (if any) will also have a bearing as to how well a soil may be characterized. Low temperature thermal treatment units (e.g. rotary kiln dryers) process soil resulting in a more homogeneous mixture than would be obtained from a stationary pile. The following guidance is offered to assist the Regional Spill Investigator in determining the number and types of samples which should be requested for various treatment scenarios. More comprehensive samples may be required depending on the reuse or disposal alternative to be used.

The responsible party and the Regional Spill Investigator should agree on a sampling plan and review procedure before the samples are collected. All sample results submitted for regulatory compliance must be analyzed by New York State Department of Health approved laboratories.

A detailed description of soil sampling protocols and procedures is available in the DEC Sampling Guidelines and Protocols manual.

A. Tank Pit

If there is a question as to the extent of residual contamination, or if comprehensive documentation is necessary, a tank pit may be sampled for laboratory analysis.

A total of five samples should be taken from the excavation. One composite sample from each of the side walls at a distance approximately one third up from the bottom of the pit. Several samples should also be collected to form one composite sample from the bottom of the pit. Any remaining samples should be grab samples from areas with greater potential for contamination such as stained soils, adjacent to a corrosion hole, opposite a manway, or opposite a tank opening. All samples shall be taken no less than six inches below the exposed surface being sampled. Samples for compositing should be taken from random locations on the floor and walls of the tank pit.

B. Soil Pile

The number of samples required for an excavated pile will be related to the quantity of soil stockpiled. The table below can be used as a guide in determining the appropriate number of samples. If, in the opinion of the Regional Spill Investigator, additional samples are warranted, they should be requested.

Recommended Number of Soil Pile Samples

CONTAMINANT	SEMI-VOLATILES		VOLATILES	
SAMPLE TYPE	Grab	Composite	Grab	Composite
SOIL QUANTITY (yd^3)				
0-50	1	1	1	1
50-100	1	2	2	1
100-200	1	3	3	1
200-300	1	4	4	1
300-400	2	4	4	2
400-500	2	5	5	2
500-800	2	6	6	2
800-1000	2	7	7	2
>1000 - Proposed Sampling plan shall be submitted for approval on site specific basis				

Best engineering judgement is needed to determine the most appropriate sampling locations. The objective of the sampling is to characterize the extent of contamination of the pile. Consideration should be given to how the soil was stockpiled. Is the most contaminated soil toward the top? Are areas visibly contaminated? How high and how long is the pile? It may be preferable to divide the pile into manageable segments. Samples should be taken from within the pile. Surface soil should not be used as sampling material. Samples shall be collected in accordance with proper sample collection techniques. All samples must be collected in glass containers with air-tight sealable tops.

Using the above sampling table, considering the factors mentioned above, and applying best engineering judgement, an acceptable evaluation of the contaminant concentrations in the soil can be made.

C. Processed Soil

Processed soil is soil which undergoes physical handling during a treatment process. Examples of treatment processes are rotary kiln dryers (low temperature thermal treatment units) or soil washing units. Soil under these conditions are more homogeneously mixed; therefore, individual samples are more likely to characterize the entire lot. Since these processes are continuous in nature, the samples should be collected over a period of time similar to that described below:

1) A sample may be collected every twenty minutes for a period of two hours. The samples are then mixed to form one composite sample. This frequency will continue until all soils are processed. The twenty minute composite interval is a guideline which can be adjusted based on the amount of soil processed and the processing period. Testing protocols are specifically defined in the treatment unit's operating permit.

2) At least one grab sample should be taken for every two sets of composites.

3) A minimum of two samples (1 grab, 1 composite) should be taken for any treated soil batch.

D. Aboveground (Ex-Situ) Treatment

Typical aboveground treatment technologies are bioremediation and soil vapor extraction. Soil remediated under these conditions will be mixed (tilled) and spread evenly over a wide area. The soil will be spread to a uniform thickness, usually no higher than two feet, although depths may be higher for soil vapor extraction treatment. The shallow depth makes sample collection an easy process. The number of required samples can be based on the quantity of soil being treated (see above table). Depth of the sample can be anywhere from six inches to the bottom of the treatment layer. Care must be taken not to penetrate the liner material. The sampling locations and depths must be randomized.

E. Non-Excavated (In-Situ) Treatment

Treatment of non-excavated soil is similar to aboveground treatment in that the contamination is spread over a wide area. It differs, however, in that the depths of the contaminated zone are varied and usually extend much deeper. Once the volume of contaminated material is determined, the above table can be used to determine the number of required samples. The sampling locations and depths must be randomized.

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SECTION VII

MANAGEMENT OF EXCAVATED (EX-SITU) CONTAMINATED SOILS

Once non-hazardous petroleum-contaminated soil is moved from its original state, it is by definition a solid industrial waste and must be managed in accordance with Part 360 and transported in accordance with Part 364 regulations. There are several alternatives available to properly handle this contaminated soil.

A. Soils Which Do Not Meet Guidance Values

Soils which do not meet the guidance values can be processed under a specific DEC Beneficial Use Determination (BUD), such as at an approved hot-mix asphalt batching plant or at a cold-mix asphalt plant, disposed of at a DEC authorized landfill, or treated on site.

1) Reuse Under Specific Beneficial Use Determinations

The DEC Division of Solid Waste has made Beneficial Use Determinations (BUD's) under 6 NYCRR Part 360, identifying recycling or re-use activities which are not subject to Part 360 regulations. The use of petroleum-contaminated soil in a manufacturing process to produce a marketable product may be eligible for BUD issuance. Each manufacturing process operator must maintain compliance with the specific requirements of the issued BUD. Hot-mix and cold-mix asphalt manufacturing are two examples of processes which have received BUD's, and other processes may be approved by the Division of Solid Waste in the future.

a. Reuse at an Approved Asphalt Batching Plant

Several asphalt plants have been authorized to accept non-hazardous contaminated soil, for use as aggregate, provided the plant is in compliance with any other DEC regulations which may apply to the facility. For example, the use of petroleum-contaminated soil may require a modification of the facility's air emission permit.

b. Production of Cold-Mix Asphalt

A Beneficial Use Determination (BUD) has been issued to the process which combines liquid asphalt emulsion with the contaminated soil to produce a cold-mix asphalt. Approval to process petroleum-contaminated soil to produce a cold-mix asphalt is issued by the Spill Response Program. The applicant must satisfy specific testing requirements prior to receiving approval to process. Each BUD identifies allowable uses for the manufactured cold-mix asphalt and any qualifying conditions and post-treatment testing protocols.

These asphalt products, if being stockpiled or transported for disposal rather than reuse, no longer meet the requirements for these BUDs and are subject to all applicable regulatory provisions of 6NYCRR Parts 360 and 364.

PCS containing asphalt products, which are left in a stockpile and are not being beneficially used, remain a solid waste until such use is accomplished. These materials shall be removed from the stockpile for beneficial use in accordance with their beneficial use approval requirements, or disposal if necessary, as rapidly as possible.

2) Disposal at an Authorized Landfill

A DEC-authorized landfill is one which either has an operating permit or is under a consent order. While this is not the preferred method of dealing with contaminated soil, it may be the most economical or, due to site constraints, the only alternative. Additional restrictions may be required by the landfill operators prior to accepting materials at their facilities.

3) Treatment On Site

Non-hazardous petroleum-contaminated soil may be treated on the site of generation without a DEC Part 360 Permit. Depending on the treatment technologies being utilized, other DEC permits may be required for air emissions and water discharges.The soil treatment processes may involve excavation of soils, securely stockpiling the soils until treatment is initiated, aboveground treatment of the soils, and/or placement of soils back into an excavation for treatment. The Regional Spill Investigator should require a remedial plan, signed by the responsible party, prior to the placement of contaminated soils into an excavation for treatment.

If the soil is to be placed back in an excavation for treatment, and if the excavation is determined to be uncontaminated, the excavation must be prepared and lined in such a manner to protect it against contamination from the soil which will be treated. However, if the excavation is contaminated it shall be the decision of the Regional Spill Investigator as to whether a liner is necessary.

All excavated soil shall be placed on an impervious material (eg: polyethylene sheeting) with the sides banked so as to control and contain run-off. During periods when no treatment is on-going, the surface of the pile(s) must also be covered with an impervious material.

The site may have to be evaluated for its impact to the ambient air. Cross media contamination shall be minimized and aesthetic or nuisance issues shall be addressed. If space on the site is limited, or if the protection of the public health is in jeopardy, then on-site treatment will not be allowed and soil must be removed to a permitted location for treatment or disposal.

There are several methods of on-site soil treatment. Typical among these are soil venting, bioremediation, soil washing and low temperature thermal treatment. All treatment should be evaluated based on its ability to achieve the desired result in the most economical and efficient manner.

B. Soils Which Meet Guidance Values

The reuse options available for de-contaminated soil depends upon which particular Guidance Values are satisfied by the soil. Table 3 identifies the reuse options and the Guidance Values which must be met to use each reuse option.

As described earlier, the DEC Division of Solid Waste (DSW) has issued a Generic Beneficial Use Determination (BUD) which exempts petroleum-contaminated soils, which have been successfully incorporated into an asphalt product by a Bureau of Spill Prevention and Response (BSPR) approved producer and which will be utilized in a bonified paving project.

In addition, the DSW has determined that soils which satisfy the appropriate Guidance Values and which will be reused as highway sub-base material, fill for the original excavation, fill elsewhere on the site of generation, or fill off-site at pre-approved locations, are being beneficially used and are exempt from the provisions of 6NYCRR Part 360. These soils are also exempt from 6NYCRR Part 364 since they no longer meet the Part 364 definition of "solid waste".

The reuse options are not listed as a hierarchy; however, off-site reuse is generally less desirable. The Regional Spill Supervisor or his/her designee will review all appropriate soil sampling data to determine if the criteria has been met for the requested reuse option. Upon request from the responsible party, the evaluation of the submitted data shall be documented with a statement from the Regional Spill Supervisor that the soil does or does not meet the criteria for the desired reuse option. **The DEC and its designee assume no liability when evaluating data for a responsible party with regard to the reuse or disposal of the soil in question.** The generator of the soil has the ultimate responsibility for the accurate and precise characterization, and the safe and proper reuse or disposal of the material. In addition, soil which is being reused off site shall not be allowed to be transported prior to the receipt of the laboratory reports confirming that the soil has satisfied the appropriate Guidance Values of this guidance document. **The responsible party shall maintain all field data, laboratory results, and final disposition records for three years.**

The possible reuse options are presented below. Additional uses of decontaminated petroleum-contaminated soil may be identified in a Part 360 Permit or BUD for a specific facility.

1) <u>Reuse as a Construction Material</u>

Soil which satisfies the Guidance Values for groundwater protection, human health protection and nuisance characteristics can be reused as construction material. Construction material can include hot asphalt, cold-mix asphalt, concrete, roadway sub-base, etc. Final destination of the soil shall be identified prior to removal from the site.

2) <u>Returned to the Original Excavation</u>

Soil which satisfies the Guidance Values for groundwater protection, human health protection, and nuisance characteristics, can be placed back in the hole from which it was excavated.

3) <u>Placed Elsewhere on Site</u>

Soil which satisfies the Guidance Values for groundwater protection, human health protection, and nuisance characteristics, can be placed anywhere within the confines of the contiguously-owned property from which it originated.

4) <u>Reuse Off-Site at a Pre-Approved Location</u>

The Regional Spill Engineer and Regional Solid Waste Engineer may approve a request for an off-site reuse location for remediated soil which satisfies the Guidance Values for groundwater protection, human health protection, and nuisance characteristics. Sites which may be considered for this option are industrial sites, authorized construction and demolition debris landfills, petroleum storage facilities, authorized landfills, or other locations where public access is limited. Written approval must be received from the property owner(s) prior to exercising this reuse option. The responsible party may submit such a request to the Regional Spill Engineer who will coordinate with the Regional Solid Waste Engineer to approve or disapprove the request.

C. Rock Debris

Rock debris, for purposes of this policy, is defined as those rocks which are four (4) inches or greater in diameter. They shall be cleaned of any packed-on petroleum-contaminated soil. These rocks are not treated as a solid waste and can be disposed of as construction and demolition debris.

If rock debris cannot be separated from the petroleum-contaminated soil, it shall be handled as a solid waste in accordance with NYCRR Part 360 and/or Part 364 requirements.

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SECTION VIII

MANAGEMENT OF NON-EXCAVATED (IN-SITU) CONTAMINATED SOIL

In-situ contaminated soil may pose a threat to the groundwater, human health and the environment. These sites must be evaluated to determine the extent of contamination and the appropriate investigative or remedial actions necessary. The soil may be treated in-situ and evaluated by the same guidelines as excavated soil, while taking into account site-specific considerations and conditions.

Additional guidance will be developed to establish procedures for evaluating the potential impacts of non-excavated (in-situ) contaminated soils. Issues which should be considered when evaluating in-situ contaminated soil are environmental sensitivity of the site, level of residual contamination, soil characteristics, depth to groundwater, present and potential land use. A proper sampling plan will be necessary to determine the number, quantity and depth of samples to properly characterize the site.

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SECTION IX

REFERENCES

NYS Department of Environmental Conservation, Cleanup Standards Task Force, DRAFT Cleanup Policy and Guidelines, October 1991.

NYS Department of Environmental Conservation, Division of Hazardous Substances Regulation, 6NYCRR Part 364. Waste Transporter Permits, January 12, 1990.

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US Environmental Protection Agency, 40 CFR Part 261 Identification and Listing of Hazardous Wastes, June 29, 1990.

US Environmental Protection Agency, Health Effects Assessment Summary Table, April 4, 1991.

APPENDIX A

HAZARDOUS WASTE DETERMINATION AND REGULATORY LEVELS

In accordance with DEC and EPA regulations, the generator of a waste material must determine if the material is a hazardous waste or a non-hazardous waste. The generator can make this determination using knowledge of the waste and/or laboratory analyses.

A waste material can be a hazardous waste due to its origin, its listed waste content, or its characteristics.

Soil contaminated with virgin petroleum products is a hazardous waste if it exhibits a characteristic of a hazardous waste, namely, ignitability, corrosivity, reactivity, and toxicity. The hazardous waste characteristics, defined in 6NYCRR Part 371, Section 371.3, and 40 CFR Section 261, are described below.

A. <u>Ignitability</u>:

A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

1) Is not a liquid and is capable under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard.

2) It is a liquid, other than an aqueous solution containing less than 24 percent ethyl alcohol by volume, and has a flash point less than 60°C (140°F).

3) It is an ignitable compressed gas.

4) It is an oxidizer.

In accordance with guidance from the DEC Division of Hazardous Substances Regulation and based on knowledge of the waste, soils contaminated with virgin petroleum products do not exhibit the above properties and do not have to be tested for the ignitability characteristic.

B. <u>Corrosivity</u>:

A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

1) It is aqueous and has pH less than or equal to 2 or greater than or equal to 12.5.

2) It is a liquid and corrodes steel at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55°C (130°F).

Based on knowledge of the waste, soils contaminated with virgin petroleum products do not exhibit the above properties, and do not have to be tested for the corrosivity characteristic.

C. Reactivity:

A solid waste exhibits the characteristic of reactivity if a representative sample of the waste has any of the following properties:

1) It is normally unstable and readily undergoes violent change without detonating.

2) It reacts violently with water.

3) It forms potentially explosive mixtures with water.

4) When mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

5) It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in quantity sufficient to present a danger to human health or the environment.

6) It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.

7) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.

8) It is a forbidden explosive, a Class A explosive or a Class B explosive.

Based on knowledge of the waste, soils contaminated with virgin petroleum products do not exhibit the above properties, and do not have to be tested for the reactivity characteristic.

D. Toxicity:

If the Toxicity Characteristic Leaching Procedure (TCLP) extract from a representative sample of the waste contain any of the contaminants identified in the attached listing of Hazardous Waste Regulatory levels at concentrations equal to or greater than the values listed, it is a hazardous waste.

With respect to petroleum-contaminated soil, the primary compound of concern is benzene. If the benzene concentration in a TCLP extract is equal to or greater than 500 ppb, the contaminated material is a characteristic hazardous waste. For gasoline contaminated soil, toxicity for lead must also be evaluated.

The regulatory level of benzene in the soil is determined by analyzing the soil using the TCLP extraction method and determining the concentration in the extract.

A second method of determination is to identify the total concentration of the contaminant in the soil. If the total concentration is less than the regulatory level, then the leachate level could not possibly exceed the standard. This approach would save laboratory costs because the TCLP would not have to be run. If the total concentration in the soil exceeds the regulatory level required in the extract, no conclusion can be drawn from these results and a complete TCLP must be run.

Additional Information on Toxicity Characteristics

On March 29, 1990, the U.S. Environmental Protection Agency established the Toxicity Characteristic (TC) Rule. The TC Rule expands the list of contaminants by which a waste can be classified as hazardous due to toxicity, and it replaces the Extraction Procedure Toxicity (EP Tox) with the Toxicity Characteristic Leaching Procedure (TCLP). The TC Rule's specified contaminant list includes the same 14 metals and pesticides as the original toxicity list, plus 25 additional organic chemicals. Each of the 39 listed contaminants has the potential for rendering a particular material a characteristic hazardous waste due to toxicity. Since benzene is one of the 25 organic compounds added to the toxicity list, and since benzene is commonly found in petroleum products, it is possible that petroleum-contaminated soil may classify as a hazardous waste. Limited relief from these hazardous waste regulations is currently available because the TC Rule has specifically deferred petroleum-contaminated soil, groundwater, and debris generated from underground storage tank (UST) releases, until the impact of the regulation is further evaluated.

UST sites are essentially those sites which have underground storage tanks containing transportation fuels, such as gasoline, jet fuel, aviation gas, and diesel fuel. (See 40 CFR Section 280.12 for a more complete definition). The TC Rule does not apply to petroleum-contaminated media produced by a leak from an UST, including associated underground piping. However, DEC regulations state that the materials contaminated by transportation fuels can be hazardous wastes if they exhibit other hazardous waste characteristics, such as toxicity due to lead.

The TC Rule, as published on March 29, 1990, became effective on September 25, 1990, for large-quantity generators, and March 29, 1991, for small quantity generators. Large quantity generators are defined as those parties who generate 2,200 pounds or more of hazardous waste in any month. Small quantity generators are those parties who generate between 220 and 2,200 pounds of hazardous waste in any month. Until the DEC adopts the TC Rule, waste generators must comply with both the EPA and DEC waste regulations. Refer to the specific regulations of interest for more information.

HAZARDOUS WASTE REGULATORY LEVELS FOR TOXICITY CHARACTERISTIC

CONSTITUENT	REGULATORY LEVEL (mg/L)
Arsenic	5.0
Barium	100.0
Benzene	0.5*
Cadmium	1.0
Carbon tetrachloride	0.5*
Chlordane	0.03*
Chlorobenzene	100.0*
Chloroform	6.0*
Chromium	5.0
o-Cresol	200.0*
m-Cresol	200.0*
Cresol (TOTAL)	200.0*
2,4-D	10.0
1,4-Dichlorobenzene	7.5*
1,2-Dichloroethane	0.5*
1,1-Dichloroethylene	0.7*
2,4-Dinitrotoluene	0.13*
Endrin	0.02
Heptachlor (and its epoxide)	0.008*
Hexachlorobenzene	0.13*
Hexachloro-1,3butadiene	0.5*
Hexachloroethane	3.0*
Lead	5.0
Lindane	0.4
Mercury	0.2

HAZARDOUS WASTE REGULATORY LEVELS FOR TOXICITY CHARACTERISTIC (Cont'd)

CONSTITUENT	REGULATORY LEVEL (mg/L)
Methoxychlor	10.0
Methyl ethyl ketone	200.0*
Nitrobenzene	2.0*
Pentachlorophenol	100.0*
Pyridine	5.0*
Selenium	1.0
Silver	5.0
Tetrachloroethylene	0.7*
Toxaphene	0.5
Trichloroethylene	0.5*
2,4,5-Trichlorophenol	400.0*
2,4,6-Trichlorophenol	2.0*
2,4,5-TP (Silvex)	1.0
Vinyl chloride	0.2*

* New Toxicity Characteristics Effective 9/25/90

APPENDIX B

GUIDANCE VALUES AND REUSE OPTIONS

TABLE 1
Guidance Values For Gasoline Contaminated Soil*

Compound	EPA Method	Detection Limit[1] (ppb) Liquid	Detection Limit[1] (ppb) Solid	TCLP Extraction Guidance Value[2] C_w (ppb)	TCLP Alternative Guidance Value C_a (ppb)	Human Health Guidance Value C_h (ppb)	Sediment Guidance Value C_s (ppb)
Benzene	8021 (8020)	1	2	0.7	14	2.4×10^4	
Ethylbenzene	8021 (8020)	1	2	5	100	8.0×10^6	
Toluene	8021 (8020)	1	2	5	100	2.0×10^7	
o-Xylene	8021 (8020)	2	2	5	100	2.0×10^8	
m-Xylene	8021 (8020)	2	2	5	100	2.0×10^8	
p-Xylene	8021 (8020)	2	2	5	100	***	
Mixed Xylenes	8021 (8020)	2	2	5	100	2.0×10^8	
Isopropylbenzene	8021	1	1	5	100	***	
n-Propylbenzene	8021	1	1	5	100	***	
p-Isopropyltoluene	8021	1	1	5	100	***	
1,2,4-Trimethylbenzene	8021	1	1	5	100	***	
1,3,5-Trimethylbenzene	8021	1	1	5	100	***	
n-Butylbenzene	8021	1	1	5	100	***	
sec-Butylbenzene	8021	1	1	5	100	***	
Naphthalene	8021	1	1	10	200	3.0×10^5	
Methyl t-butyl ether (MTBE)[3]	8021 (8020)	1	1	50	1,000	***	

***Nuisance Characteristics Guidance:**

No petroleum-type odors.

No individual contaminant in soil at greater than 10,000 ppb.

(1) The listed Detection Limits are Practical Quantitation Limits (PQLs). The Method Detection Limit (MDL) is the best possible detection. Laboratories report the Practical Quantitation Limit (PQL), which is generally 4 times the MDL. Efforts should be made to obtain the best detection possible when selecting a laboratory. When the Guidance Value or standard is below the detection limit, achieving the detection limit will be considered acceptable for meeting the Guidance Value or standard.

(2) The TCLP Extraction Guidance Values are equal to the NYSDEC groundwater quality standards or Guidance Values, or the NYSDOH drinking water quality standards or Guidance Values, whichever is more stringent.

(3) Methyl t-butyl ether (MTBE) is not a target compound of Methods 8021 and 8020, but MTBE may be determined using these methods with appropriate quality assurance and quality control measures.

*** No Guidance Value identified in EPA HEAST Report.

TABLE 2
Guidance Values for Fuel Oil Contaminated Soil*

Compound	EPA Method	Detection Limit[1] (ppb)		TCLP Extraction Guidance Value[2] C_w (ppb)	TCLP Alternative Guidance Value C_a (ppb)	Human Health Guidance Value C_h (ppb)	Sediment Guidance Value C_s (ppb)	
		Liquid	Solid				Fresh	Marine
Benzene	8021 (8020)	1	2	0.7	14	2.4×10^4		
Ethylbenzene	8021 (8020)	1	2	5	100	8.0×10^6		
Toluene	8021 (8020)	1	2	5	100	2.0×10^7		
o-Xylene	8021 (8020)	2	2	5	100	2.0×10^8		
m-Xylene	8021 (8020)	2	2	5	100	2.0×10^8		
p-Xylene	8021 (8020)	2	2	5	100	***		
Mixed Xylenes	8021 (8020)	2	2	5	100	2.0×10^8		
Isopropylbenzene	8021	1	1	5	100	***		
n-Propylbenzene	8021	1	1	5	100	***		
p-Isopropyltoluene	8021	1	1	5	100	***		
1,2,4-Trimethylbenzene	8021	1	1	5	100	***		
1,3,5-Trimethylbenzene	8021	1	1	5	100	***		
n-Butylbenzene	8021	1	1	5	100	***		
sec-Butylbenzene	8021	1	1	5	100	***		
t-Butyl benzene	8021	1	1	5	100	***		
Naphthalene[3]	8021 (8270)	1 (6)	1 (330)	10	200	3.0×10^5		
Anthracene	8270	8	330	50	1,000	2.0×10^7		
Fluorene	8270	8	330	50	1,000	3.0×10^6		
Phenanthrene	8270	22	330	50	1,000	***		
Pyrene	8270	8	330	50	1,000	2.0×10^6		
Acenaphthene	8270	8	330	20	400	5.0×10^6		
Benzo(a)anthracene	8270	31	330	.002	.04[4]	220	33	18
Fluoranthene	8270	9	330	50	1,000	3.0×10^6		

(CONTINUED ON THE NEXT PAGE)

TABLE 2 (Cont'd)
Guidance Values for Fuel Oil Contaminated Soil*

Compound	EPA Method	Detection Limit (ppb) Liquid	Detection Limit (ppb) Solid	TCLP Extraction Guidance Value[3] C_w (ppb)	TCLP Alternative Guidance Value C_a (ppb)	Human Health Guidance Value C_h (ppb)	Sediment Guidance Value C_s (ppb) Fresh	Sediment Guidance Value C_s (ppb) Marine
Benzo(b)fluoranthene	8270	19	330	.002	.04[4]	220	33	18
Benzo(k)fluoranthene	8270	10	330	.002	.04[4]	220	33	18
Chrysene	8270	10	330	.002	.04[4]	***	33	18
Benzo(a)pyrene	8270	10	330	.002	.04[4]	61	33	18
Benzo(g,h,i)perylene	8270	10	330	.002	.04[4]	***		
Indeno(1,2,3-cd)pyrene	8270	10	330	.002	.04[4]	***		
Dibenz(a,h)anthracene	8270	10	330	50	1,000	14		

*** Nuisance Characteristics Guidance:**
No Petroleum-type odors.
No individual contaminant in soil at greater than 10,000 ppb.

(1) The listed Detection Limits are Practical Quantitation Limits (PQL's). The Method Detection Limit (MDL) is the best possible detection. Laboratories report the Practical Quantitation Limit (PQL), which is generally 4 times the MDL. Efforts should be made to obtain the best detection possible when selecting a laboratory. When the Guidance Value or standard is below the detection limit, achieving the detection limit will be considered acceptable for meeting the Guidance Value or standard.

(2) The TCLP Extraction Guidance Values are equal to the NYSDEC groundwater quality standards or Guidance Values, or the NYSDOH drinking water quality standards or Guidance Values, whichever is more stringent.

(3) For naphthalene analysis in a liquid matrix, both Method 8021 and Method 8270 can provide satisfactory levels for comparison to the C_w of 10 ppb.

For naphthalene analysis in a solid matrix, Method 8021 is preferred over Method 8270 for comparison to the C_a of 200 ppb. If the C_a Guidance Value is not being used in the soil evaluation, then both Method 8021 and 8270 can provide satisfactory detection levels for comparison to the C_h of 3.0×10^5, and nuisance characteristic of 10,000 ppb.

(4) Due to the high detection limit for a solid matrix, the TCLP Extraction Method must be used to demonstrate groundwater quality protection for these compounds.

*** No Guidance Value identified in EPA HEAST Report.

TABLE 3
Soil Reuse Options

Reuse Option	Minimum Criteria To Be Met[1]		
	Protection of Groundwater	Protection of Human Health	Protection Against Nuisance Characteristics
Asphalt[2] or Concrete Manufacturing			
Cold-Mix Asphalt[2]			
Construction Material	X	X	X
Fill for Original Excavation	X	X	X
Fill Elsewhere On-Site	X	X	X
Off-Site at Pre-Approved Location	X	X	X

(1) In addition, the criteria for protection of fish and wildlife must be met when sediments are the waste materials being handled, and when these soils or sediments are being disposed in surface waters, marine waters, or wetland areas.

(2) The soils must satisfy the criteria established under the particular BUD issuance.

APPENDIX C
Soil Sampling Analytical Results

WASTE STREAM TECHNOLOGY, INC.
302 Grote Street
Buffalo, NY 14207
(716) 876-5290

Analytical Data Report
Report Date : 12/17/99
Group Number : 9901-1927

Prepared For :
Mr. Greg Zynda
IT Corp.
2113 Emmorton Park Road
Edgewood, MD 21040

Site: Fort Totten

Analytical Parameters	Analytical Services Number of Samples	Turnaround Time
8260B STARS	31	Standard
8270 STARS	31	Standard

Report Released By : Daniel W. Voll
Daniel Vollmer, Laboratory QA/QC Officer

ENVIRONMENTAL LABORATORY ACCREDITATION CERTIFICATION NUMBERS
NYSDOH ELAP #11179 NJDEPE #73977 CDHS ELAP #2189

WASTE STREAM TECHNOLOGY

Analytical Data Report
Report Date : 12/17/99
Group Number : 9901-1927

Field and Laboratory Information

Client Id	WST Lab #	Matrix	Date Sampled	Date Received	Time
FT512-SW1	WS59587	Soil	12/02/99	12/03/99	10:00
FT512-SW2	WS59588	Soil	12/02/99	12/03/99	10:00
FT512-SW3	WS59589	Soil	12/02/99	12/03/99	10:00
FT512-SW4	WS59590	Soil	12/02/99	12/03/99	10:00
FT139-SW1	WS59591	Soil	12/02/99	12/03/99	10:00
FT139-SW2	WS59592	Soil	12/02/99	12/03/99	10:00
FT139-SW3	WS59593	Soil	12/02/99	12/03/99	10:00
FT139-SW4	WS59594	Soil	12/02/99	12/03/99	10:00
FT139-BE1	WS59595	Soil	12/02/99	12/03/99	10:00
FT407-SW1	WS59596	Soil	12/02/99	12/03/99	10:00
FT407-SW2	WS59597	Soil	12/02/99	12/03/99	10:00
FT407-SW3	WS59598	Soil	12/02/99	12/03/99	10:00
FT407-SW4	WS59599	Soil	12/02/99	12/03/99	10:00
FT513-BE1	WS59600	Soil	12/02/99	12/03/99	10:00
FT513-SW1	WS59601	Soil	12/02/99	12/03/99	10:00
FT513-SW2	WS59602	Soil	12/02/99	12/03/99	10:00
FT513-SW3	WS59603	Soil	12/02/99	12/03/99	10:00
FT513-SW4	WS59604	Soil	12/02/99	12/03/99	10:00
FT513-SW1D	WS59605	Soil	12/02/99	12/03/99	10:00
FT512-BE1	WS59606	Soil	12/02/99	12/03/99	10:00
FT506-SW1	WS59607	Soil	12/01/99	12/03/99	10:00
FT506-SW2	WS59608	Soil	12/01/99	12/03/99	10:00
FT506-SW3	WS59609	Soil	12/01/99	12/03/99	10:00
FT506-SW4	WS59610	Soil	12/01/99	12/03/99	10:00
FT506-BE1	WS59611	Soil	12/01/99	12/03/99	10:00
FT505-SW1	WS59612	Soil	12/02/99	12/03/99	10:00
FT505-SW2	WS59613	Soil	12/02/99	12/03/99	10:00
FT505-SW3	WS59614	Soil	12/02/99	12/03/99	10:00
FT505-SW4	WS59615	Soil	12/02/99	12/03/99	10:00
FT505-BE1	WS59616	Soil	12/02/99	12/03/99	10:00
FT407-BE1	WS59617	Soil	12/02/99	12/03/99	10:00
Sample Status Upon Receipt : No irregularities.					

WASTE STREAM TECHNOLOGY, INC.

302 Grote Street
Buffalo, NY 14207
(716) 876-5290

Analytical Data Report
Report Date : 12/29/99
Group Number : 9901-1953

Prepared For :
Mr. Greg Zynda
IT Corp.
2113 Emmorton Park Road
Edgewood, MD 21040

Site: Fort Totten

Field and Laboratory Information

Client Id	WST Lab #	Matrix	Date Sampled	Date Received	Time
FT137-BE1	WS59771	Soil	12/06/99	12/08/99	09:00
FT141-BE1	WS59772	Soil	12/06/99	12/08/99	09:00
FT424-BE1	WS59773	Soil	12/07/99	12/08/99	09:00
FT424-BE1 D	WS59774	Soil	12/07/99	12/08/99	09:00
FT427-SW1	WS59775	Soil	12/07/99	12/08/99	09:00
FT427-SW2	WS59776	Soil	12/07/99	12/08/99	09:00
FT427-SW3	WS59777	Soil	12/07/99	12/08/99	09:00
FT427-SW4	WS59778	Soil	12/07/99	12/08/99	09:00
FT430-BE1	WS59779	Soil	12/07/99	12/08/99	09:00
FT430-SW1	WS59780	Soil	12/07/99	12/08/99	09:00
Sample Status Upon Receipt : No irregularities.					

Analytical Services

Analytical Parameters	Number of Samples	Turnaround Time
8260B STARS	10	Standard
8270 STARS	10	Standard

Report Released By : Daniel W. Voll
Daniel Vollmer, Laboratory QA/QC Officer

ENVIRONMENTAL LABORATORY ACCREDITATION CERTIFICATION NUMBERS
NYSDOH ELAP #11179 NJDEPE #73977 CDHS ELAP #2189

WASTE STREAM TECHNOLOGY

WASTE STREAM TECHNOLOGY, INC.

302 Grote Street
Buffalo, NY 14207
(716) 876-5290

Analytical Data Report
Report Date : 12/29/99
Group Number : 9901-1973

Prepared For :
Mr. Greg Zynda
IT Corp.
2113 Emmorton Park Road
Edgewood, MD 21040

Site: Fort Totten - USTs

Field and Laboratory Information

Client Id	WST Lab #	Matrix	Date Sampled	Date Received	Time
FT-WC	WS59873	Soil	12/08/99	12/10/99	09:00
Sample Status Upon Receipt : No irregularities.					

Analytical Services

Analytical Parameters	Number of Samples	Turnaround Time
Cyanide	1	Standard
RCRA Characteristics	1	Standard
% Solids	1	Standard
Paint Filter	1	Standard
Diesel Range Organics	1	Standard
Full TCLP	1	Standard
8270	1	Standard
Pesticides/PCBs	1	Standard
Herbicides	1	Standard
TOX	1	Standard
TCL 8260B	1	Standard

Report Released By : Daniel W. Vollmer
Daniel Vollmer, Laboratory QA/QC Officer

ENVIRONMENTAL LABORATORY ACCREDITATION CERTIFICATION NUMBERS
NYSDOH ELAP #11179 NJDEPE #73977 CDHS ELAP #2189

WASTE STREAM TECHNOLOGY

METHODOLOGIES

The specific methodologies employed in obtaining the analytical data reported are indicated on each of the result forms. The method numbers shown refer to the following U.S. Environmental Protection Agency Reference:

Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020, March 1979, Revised 1983, U.S. Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268.

Federal Register, 40 CFR Part 136: Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act. Revised July 1992.

Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. Third Edition, Revised December 1996, U.S. EPA SW-846.

Annual Book of ASTM Standards, Volume II. ASTM, 100 Harbor Drive, West Conshohocken, PA 19428-2959.

Standard Methods for the Examination of Water and Wastewater. (20th Edition). American Public Health Association, 1105 18th Street, NW, Washington, D.C. 20036.

ORGANIC DATA QUALIFIERS

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicates the presence of a compound that meets identification criteria, but the result is less than the sample quantitation limit but greater than zero.

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS.

B - This flag is used when the analyte is found in the associated blank as well as the sample.

E - This flag identifies all compounds whose concentrations exceed the calibration range of the GC/MS instrument of that specific analysis.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.

G - Matrix spike recovery is greater than the expected upper limit of analytical performance.

L - Matrix spike recovery is less than the expected lower limit of analytical performance.

- Indicates that a surrogate recovery was found to be outside the expected limits of analytical performance.

$ - Indicates that the surrogate compound was diluted out. The sample had to be diluted to obtain analytical results and a recovery could not be calculated.

(%) - Indicates that the compound is a surrogate and that the value reported for this compound is in percent recovery. The quality control recovery limits are indicated in the detection limit or QC limits column.

Waste Stream Technology, Inc.
Volatile Organics in Soil
SW-846 8260B

Site: Fort Totten
Date Sampled: 12/06/99
Date Received: 12/08/99

Group Number: 9901-1953
Units: µg/Kg
Matrix: Soil

WST ID: WS59771
Client ID: FT137-BE1
Extraction Date: 12/20/99
Date Analyzed: 12/20/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	125	Not detected		U
benzene	125	Not detected		U
toluene	125	273		
ethylbenzene	125	1970		
m,p-xylene	125	21600		
o-xylene	125	12000		
isopropylbenzene	125	2350		
n-propylbenzene	125	2810		
1,3,5-trimethylbenzene	125	23500		
tert-butylbenzene	125	694		
1,2,4-trimethylbenzene	125	60600		D
sec-butylbenzene	125	7220		
p-isopropyltoluene	125	5820		
n-butylbenzene	125	Not detected		U
naphthalene	125	32200		
1,2-Dichloroethane-d4 (%)		91	70-121	
Toluene-d8 (%)		106	81-117	
Bromofluorobenzene (%)		102	74-121	

Dilution Factor 125

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/06/99
Date Received: 12/08/99

Group Number: 9901-1953
Units: µg/Kg
Matrix: Soil

WST ID: WS59771
Client ID: FT137-BE1
Extraction Date: 12/17/99
Date Analyzed: 12/20/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	6600	2810		J
fluorene	6600	13900		
phenanthrene	6600	20400		
pyrene	6600	3060		J
acenaphthene	6600	3810		J
benzo[a]anthracene	6600	Not detected		U
fluoranthene	6600	Not detected		U
benzo[b]fluoranthene	6600	Not detected		U
benzo[k]fluoranthene	6600	Not detected		U
benzo[a]pyrene	6600	Not detected		U
dibenzo[a,h]anthracene	6600	Not detected		U
benzo[g,h,i]perylene	6600	Not detected		U
indeno[1,2,3-cd]pyrene	6600	Not detected		U
naphthalene	6600	22700		
chrysene	6600	Not detected		U
Nitrobenzene-d5 (%)		105	23-120	
2-Fluorobiphenyl (%)		92	30-115	
Terphenyl-d14 (%)		78	18-137	

Dilution Factor 20

Waste Stream Technology, Inc.
Volatile Organics in Soil
SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59595
Client ID: FT139-BE1
Extraction Date: NA
Date Analyzed: 12/07/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	Not detected		U
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	2		
1,2-Dichloroethane-d4 (%)		91	70-121	
Toluene-d8 (%)		89	81-117	
Bromofluorobenzene (%)		85	74-121	

Dilution Factor 1

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59595
Client ID: FT139-BE1
Extraction Date: 12/13/99
Date Analyzed: 12/13/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	Not detected		U
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		74	23-120	
2-Fluorobiphenyl (%)		73	30-115	
Terphenyl-d14 (%)		84	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.
Volatile Organics in Soil
SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59591
Client ID: FT139-SW1
Extraction Date: NA
Date Analyzed: 12/07/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	2		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	Not detected		U
1,2-Dichloroethane-d4 (%)		94	70-121	
Toluene-d8 (%)		90	81-117	
Bromofluorobenzene (%)		90	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59591
Client ID: FT139-SW1
Extraction Date: 12/09/99
Date Analyzed: 12/10/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	142		J
pyrene	330	138		J
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	139		J
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	78		J
Nitrobenzene-d5 (%)		71	23-120	
2-Fluorobiphenyl (%)		67	30-115	
Terphenyl-d14 (%)		66	18-137	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
Volatile Organics in Soil
SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59592
Client ID: FT139-SW2
Extraction Date: NA
Date Analyzed: 12/07/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	2		
ethylbenzene	1	Not detected		U
m,p-xylene	1	1		
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	5		
1,2-Dichloroethane-d4 (%)		94	70-121	
Toluene-d8 (%)		92	81-117	
Bromofluorobenzene (%)		88	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59592
Client ID: FT139-SW2
Extraction Date: 12/13/99
Date Analyzed: 12/13/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	292		J
fluorene	330	135		J
phenanthrene	330	1010		
pyrene	330	602		
acenaphthene	330	148		J
benzo[a]anthracene	330	291		J
fluoranthene	330	806		
benzo[b]fluoranthene	330	152		J
benzo[k]fluoranthene	330	230		J
benzo[a]pyrene	330	223		J
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	89		J
indeno[1,2,3-cd]pyrene	330	98		J
naphthalene	330	Not detected		U
chrysene	330	286		J
Nitrobenzene-d5 (%)		83	23-120	
2-Fluorobiphenyl (%)		85	30-115	
Terphenyl-d14 (%)		86	18-137	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59593
Client ID: FT139-SW3
Extraction Date: NA
Date Analyzed: 12/07/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	10		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	2		
1,2-Dichloroethane-d4 (%)		93	70-121	
Toluene-d8 (%)		88	81-117	
Bromofluorobenzene (%)		87	74-121	

Dilution Factor 1

Waste Stream Technology, Inc.

DEC List 8270 BNs in Soil

EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59593
Client ID: FT139-SW3
Extraction Date: 12/13/99
Date Analyzed: 12/13/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	233		J
pyrene	330	214		J
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	118		J
fluoranthene	330	280		J
benzo[b]fluoranthene	330	91		J
benzo[k]fluoranthene	330	104		J
benzo[a]pyrene	330	113		J
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	123		J
Nitrobenzene-d5 (%)		80	23-120	
2-Fluorobiphenyl (%)		81	30-115	
Terphenyl-d14 (%)		83	18-137	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
Volatile Organics in Soil
SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59594
Client ID: FT139-SW4
Extraction Date: NA
Date Analyzed: 12/07/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	4		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	2		
1,2-Dichloroethane-d4 (%)		90	70-121	
Toluene-d8 (%)		92	81-117	
Bromofluorobenzene (%)		88	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59594
Client ID: FT139-SW4
Extraction Date: 12/13/99
Date Analyzed: 12/13/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	Not detected		U
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		79	23-120	
2-Fluorobiphenyl (%)		82	30-115	
Terphenyl-d14 (%)		84	18-137	

Dilution Factor 1

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Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

Site: Fort Totten
Date Sampled: 12/06/99
Date Received: 12/08/99

Group Number: 9901-1953
Units: µg/Kg
Matrix: Soil

WST ID: WS59772
Client ID: FT141-BE1
Extraction Date: NA
Date Analyzed: 12/15/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	5	Not detected		U
benzene	5	Not detected		U
toluene	5	22		B
ethylbenzene	5	38		
m,p-xylene	5	80		
o-xylene	5	47		
isopropylbenzene	5	159		
n-propylbenzene	5	356		
1,3,5-trimethylbenzene	5	61		
tert-butylbenzene	5	76		
1,2,4-trimethylbenzene	5	168		
sec-butylbenzene	5	456		
p-isopropyltoluene	5	95		
n-butylbenzene	5	844		
naphthalene	5	300		B J
1,2-Dichloroethane-d4 (%)		76	70-121	
Toluene-d8 (%)		87	81-117	
Bromofluorobenzene (%)		106	74-121	
Dilution Factor 5				

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/06/99
Date Received: 12/08/99

Group Number: 9901-195
Units: µg/Kg
Matrix: Soil

WST ID: WS59772
Client ID: FT141-BE1
Extraction Date: 12/16/99
Date Analyzed: 12/20/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	6600	1550		J
fluorene	6600	13500		J
phenanthrene	6600	16600		
pyrene	6600	Not detected		U
acenaphthene	6600	5670		J
benzo[a]anthracene	6600	Not detected		U
fluoranthene	6600	Not detected		U
benzo[b]fluoranthene	6600	Not detected		U
benzo[k]fluoranthene	6600	Not detected		U
benzo[a]pyrene	6600	Not detected		U
dibenzo[a,h]anthracene	6600	Not detected		U
benzo[g,h,i]perylene	6600	Not detected		U
indeno[1,2,3-cd]pyrene	6600	Not detected		U
naphthalene	6600	1910		J J
chrysene	6600	Not detected		U
Nitrobenzene-d5 (%)		95	23-120	
2-Fluorobiphenyl (%)		84	30-115	
Terphenyl-d14 (%)		91	18-137	

Dilution Factor 20

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59617
Client ID: FT407-BE1
Extraction Date: NA
Date Analyzed: 12/13/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	2		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	Not detected		U
1,2-Dichloroethane-d4 (%)		96	70-121	
Toluene-d8 (%)		85	81-117	
Bromofluorobenzene (%)		88	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.

DEC List 8270 BNs in Soil

EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59617
Client ID: FT407-BE1
Extraction Date: 12/13/99
Date Analyzed: 12/14/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	Not detected		U
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		76	23-120	
2-Fluorobiphenyl (%)		82	30-115	
Terphenyl-d14 (%)		81	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.
Volatile Organics in Soil
SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59596
Client ID: FT407-SW1
Extraction Date: NA
Date Analyzed: 12/07/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	Not detected		U
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	Not detected		U
1,2-Dichloroethane-d4 (%)		86	70-121	
Toluene-d8 (%)		86	81-117	
Bromofluorobenzene (%)		92	74-121	

Dilution Factor 1

Waste Stream Technology, Inc.

DEC List 8270 BNs in Soil

EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59596
Client ID: FT407-SW1
Extraction Date: 12/13/99
Date Analyzed: 12/13/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	Not detected		U
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		82	23-120	
2-Fluorobiphenyl (%)		84	30-115	
Terphenyl-d14 (%)		86	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.
Volatile Organics in Soil
SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59597
Client ID: FT407-SW2
Extraction Date: NA
Date Analyzed: 12/07/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	Not detected		U
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	Not detected		U
1,2-Dichloroethane-d4 (%)		88	70-121	
Toluene-d8 (%)		87	81-117	
Bromofluorobenzene (%)		82	74-121	

Dilution Factor 1

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59597
Client ID: FT407-SW2
Extraction Date: 12/13/99
Date Analyzed: 12/13/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	Not detected		U
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		80	23-120	
2-Fluorobiphenyl (%)		84	30-115	
Terphenyl-d14 (%)		86	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59598
Client ID: FT407-SW3
Extraction Date: NA
Date Analyzed: 12/08/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	Not detected		U
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	1		
1,2-Dichloroethane-d4 (%)		91	70-121	
Toluene-d8 (%)		94	81-117	
Bromofluorobenzene (%)		87	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.

DEC List 8270 BNs in Soil

EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59598
Client ID: FT407-SW3
Extraction Date: 12/13/99
Date Analyzed: 12/13/99

Compound	**Detection Limit**	**Result**	**QC Limits (%)**	**Qualifier**
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	Not detected		U
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		72	23-120	
2-Fluorobiphenyl (%)		76	30-115	
Terphenyl-d14 (%)		86	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59599
Client ID: FT407-SW4
Extraction Date: NA
Date Analyzed: 12/08/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	Not detected		U
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	2		
1,2-Dichloroethane-d4 (%)		82	70-121	
Toluene-d8 (%)		89	81-117	
Bromofluorobenzene (%)		82	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59599
Client ID: FT407-SW4
Extraction Date: 12/13/99
Date Analyzed: 12/13/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	Not detected		U
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		77	23-120	
2-Fluorobiphenyl (%)		82	30-115	
Terphenyl-d14 (%)		83	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

Site: Fort Totten
Date Sampled: 12/07/99
Date Received: 12/08/99

Group Number: 9901-1953
Units: µg/Kg
Matrix: Soil

WST ID: WS59773
Client ID: FT424-BE1
Extraction Date: NA
Date Analyzed: 12/15/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	9		B
ethylbenzene	1	8		
m,p-xylene	1	25		
o-xylene	1	3		
isopropylbenzene	1	19		
n-propylbenzene	1	24		
1,3,5-trimethylbenzene	1	26		
tert-butylbenzene	1	5		
1,2,4-trimethylbenzene	1	85		
sec-butylbenzene	1	131		
p-isopropyltoluene	1	7		
n-butylbenzene	1	127		
naphthalene	1	274		B
1,2-Dichloroethane-d4 (%)		79	70-121	
Toluene-d8 (%)		91	81-117	
Bromofluorobenzene (%)		107	74-121	

Dilution Factor 1

WASTE STREAM

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/07/99
Date Received: 12/08/99

Group Number: 9901-1953
Units: µg/Kg
Matrix: Soil

WST ID: WS59773
Client ID: FT424-BE1
Extraction Date: 12/17/99
Date Analyzed: 12/17/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	733		
phenanthrene	330	1530		
pyrene	330	187		J
acenaphthene	330	216		J
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	209		J
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		71	23-120	
2-Fluorobiphenyl (%)		79	30-115	
Terphenyl-d14 (%)		68	18-137	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

Site: Fort Totten
Date Sampled: 12/7/99
Date Received: 12/8/99

Group Number: 9901-1953
Units: µg/Kg
Matrix: Soil

WST ID: WS59774
lient ID: FT424-BE1D
Extraction Date: NA
Date Analyzed: 12/15/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	11		B
ethylbenzene	1	9		
m,p-xylene	1	6		
o-xylene	1	3		
isopropylbenzene	1	38		
n-propylbenzene	1	43		
1,3,5-trimethylbenzene	1	13		
tert-butylbenzene	1	14		
1,2,4-trimethylbenzene	1	9		
sec-butylbenzene	1	217		
p-isopropyltoluene	1	8		
n-butylbenzene	1	181		
naphthalene	1	277		B
2-Dichloroethane-d4 (%)		74	70-121	
oluene-d8 (%)		86	81-117	
Bromofluorobenzene (%)		124	74-121	#

Dilution Factor 1

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/07/99
Date Received: 12/08/99

Group Number: 9901-1953
Units: µg/Kg
Matrix: Soil

WST ID: WS59774
Client ID: FT424-BE1D
Extraction Date: 12/17/99
Date Analyzed: 12/17/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	455		
phenanthrene	330	912		
pyrene	330	114		J
acenaphthene	330	132		J
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	147		J
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		71	23-120	
2-Fluorobiphenyl (%)		75	30-115	
Terphenyl-d14 (%)		68	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

Site: Fort Totten
Date Sampled: 12/07/99
Date Received: 12/08/99

Group Number: 9901-1953
Units: µg/Kg
Matrix: Soil

WST ID: WS59775
Client ID: FT427-SW1
Extraction Date: NA
Date Analyzed: 12/15/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	5		B
ethylbenzene	1	Not detected		U
m,p-xylene	1	2		
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	2		
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	1		
sec-butylbenzene	1	8		
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	8		
naphthalene	1	17		B
1,2-Dichloroethane-d4 (%)		90	70-121	
Toluene-d8 (%)		90	81-117	
Bromofluorobenzene (%)		93	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/07/99
Date Received: 12/08/99

Group Number: 9901-1953
Units: µg/Kg
Matrix: Soil

WST ID: WS59775
Client ID: FT427-SW1
Extraction Date: 12/17/99
Date Analyzed: 12/17/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	Not detected		U
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		63	23-120	
2-Fluorobiphenyl (%)		66	30-115	
Terphenyl-d14 (%)		72	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.
Volatile Organics in Soil
SW-846 8260B

Site: Fort Totten
Date Sampled: 12/07/99
Date Received: 12/08/99

Group Number: 9901-1953
Units: µg/Kg
Matrix: Soil

WST ID: WS59776
Client ID: FT427-SW2
Extraction Date: NA
Date Analyzed: 12/15/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	2		
benzene	1	Not detected		U
toluene	1	5		B
ethylbenzene	1	2		
m,p-xylene	1	12		
o-xylene	1	9		
isopropylbenzene	1	2		
n-propylbenzene	1	3		
1,3,5-trimethylbenzene	1	15		
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	44		
sec-butylbenzene	1	5		
p-isopropyltoluene	1	11		
n-butylbenzene	1	Not detected		U
naphthalene	1	49		B
1,2-Dichloroethane-d4 (%)		90	70-121	
Toluene-d8 (%)		90	81-117	
Bromofluorobenzene (%)		86	74-121	

Dilution Factor 1

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/07/99
Date Received: 12/08/99

Group Number: 9901-1953
Units: µg/Kg
Matrix: Soil

WST ID: WS59776
Client ID: FT427-SW2
Extraction Date: 12/17/99
Date Analyzed: 12/17/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	Not detected		U
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		68	23-120	
2-Fluorobiphenyl (%)		67	30-115	
Terphenyl-d14 (%)		72	18-137	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

Site: Fort Totten
Date Sampled: 12/07/99
Date Received: 12/08/99

Group Number: 9901-1953
Units: µg/Kg
Matrix: Soil

WST ID: WS59777
Client ID: FT427-SW3
Extraction Date: NA
Date Analyzed: 12/15/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	5		B
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	6		B
1,2-Dichloroethane-d4 (%)		96	70-121	
Toluene-d8 (%)		89	81-117	
Bromofluorobenzene (%)		94	74-121	

Dilution Factor 1

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/07/99
Date Received: 12/08/99

Group Number: 9901-1953
Units: µg/Kg
Matrix: Soil

WST ID: WS59777
Client ID: FT427-SW3
Extraction Date: 12/17/99
Date Analyzed: 12/17/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	Not detected		U
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		59	23-120	
2-Fluorobiphenyl (%)		62	30-115	
Terphenyl-d14 (%)		70	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

ite: Fort Totten
ate Sampled: 12/7/99
Date Received: 12/8/99

Group Number: 9901-1953
Units: µg/Kg
Matrix: Soil

WST ID: WS59778
lient ID: FT427-SW4
Extraction Date: NA
Date Analyzed: 12/15/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	7		B
ethylbenzene	1	Not detected		U
m,p-xylene	1	1		
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	2		B
2-Dichloroethane-d4 (%)		85	70-121	
oluene-d8 (%)		84	81-117	
Bromofluorobenzene (%)		99	74-121	

Dilution Factor 1

WASTE STREAM

Waste Stream Technology, Inc.

DEC List 8270 BNs in Soil

EPA 8270

Site: Fort Totten
Date Sampled: 12/07/99
Date Received: 12/08/99

Group Number: 9901-1953
Units: µg/Kg
Matrix: Soil

WST ID: WS59778
Client ID: FT427-SW4
Extraction Date: 12/17/99
Date Analyzed: 12/17/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	Not detected		U
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		62	23-120	
2-Fluorobiphenyl (%)		63	30-115	
Terphenyl-d14 (%)		64	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

ite: Fort Totten
ate Sampled: 12/7/99
Date Received: 12/8/99

Group Number: 9901-1953
Units: µg/Kg
Matrix: Soil

WST ID: WS59779
lient ID: FT430-BE1
Extraction Date: NA
Date Analyzed: 12/15/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	5		
benzene	1	2		
toluene	1	9		B
ethylbenzene	1	5		
m,p-xylene	1	13		
o-xylene	1	Not detected		U
isopropylbenzene	1	6		
n-propylbenzene	1	8		
1,3,5-trimethylbenzene	1	10		
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	39		
sec-butylbenzene	1	140		
p-isopropyltoluene	1	28		
n-butylbenzene	1	Not detected		U
naphthalene	1	27		B
2-Dichloroethane-d4 (%)		90	70-121	
Toluene-d8 (%)		83	81-117	
Bromofluorobenzene (%)		128	74-121	#

Dilution Factor 1

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/07/99
Date Received: 12/08/99

Group Number: 9901-1953
Units: µg/Kg
Matrix: Soil

WST ID: WS59779
Client ID: FT430-BE1
Extraction Date: 12/17/99
Date Analyzed: 12/17/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	564		
fluorene	330	700		
phenanthrene	330	2120		
pyrene	330	407		
acenaphthene	330	499		
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	144		J
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		82	23-120	
2-Fluorobiphenyl (%)		76	30-115	
Terphenyl-d14 (%)		57	18-137	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

Site: Fort Totten
ate Sampled: 12/7/99
Date Received: 12/8/99

Group Number: 9901-1953
Units: µg/Kg
Matrix: Soil

WST ID: WS59780
lient ID: FT430-SW1
Extraction Date: 12/20/99
Date Analyzed: 12/20/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	125	Not detected		U
benzene	125	Not detected		U
toluene	125	173		
ethylbenzene	125	3480		
m,p-xylene	125	11200		
o-xylene	125	3200		
isopropylbenzene	125	2810		
n-propylbenzene	125	6170		
1,3,5-trimethylbenzene	125	11900		
tert-butylbenzene	125	186		
1,2,4-trimethylbenzene	125	37700		D
sec-butylbenzene	125	4790		
p-isopropyltoluene	125	3830		
n-butylbenzene	125	Not detected		U
naphthalene	125	2280		
2-Dichloroethane-d4 (%)		91	70-121	
oluene-d8 (%)		105	81-117	
Bromofluorobenzene (%)		99	74-121	

Dilution Factor 125

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/07/99
Date Received: 12/08/99

Group Number: 9901-195
Units: µg/Kg
Matrix: Soil

WST ID: WS59780
Client ID: FT430-SW1
Extraction Date: 12/17/99
Date Analyzed: 12/20/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	3300	Not detected		U
fluorene	3300	8470		
phenanthrene	3300	16000		
pyrene	3300	1900		J
acenaphthene	3300	4230		
benzo[a]anthracene	3300	Not detected		U
fluoranthene	3300	876		J
benzo[b]fluoranthene	3300	Not detected		U
benzo[k]fluoranthene	3300	Not detected		U
benzo[a]pyrene	3300	Not detected		U
dibenzo[a,h]anthracene	3300	Not detected		U
benzo[g,h,i]perylene	3300	Not detected		U
indeno[1,2,3-cd]pyrene	3300	Not detected		U
naphthalene	3300	15800		
chrysene	3300	Not detected		U
Nitrobenzene-d5 (%)		90	23-120	
2-Fluorobiphenyl (%)		84	30-115	
Terphenyl-d14 (%)		76	18-137	

Dilution Factor 10

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

ite: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59616
Client ID: FT505-BE1
Extraction Date: NA
Date Analyzed: 12/13/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	1		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	Not detected		U
2-Dichloroethane-d4 (%)		83	70-121	
Toluene-d8 (%)		90	81-117	
Bromofluorobenzene (%)		89	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

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Waste Stream Technology, Inc.

DEC List 8270 BNs in Soil

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59616
Client ID: FT505-BE1
Extraction Date: 12/13/99
Date Analyzed: 12/14/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	79		J
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	75		J
fluoranthene	330	89		J
benzo[b]fluoranthene	330	74		J
benzo[k]fluoranthene	330	95		J J
benzo[a]pyrene	330	80		J
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	75		J
Nitrobenzene-d5 (%)		82	23-120	
2-Fluorobiphenyl (%)		84	30-115	
Terphenyl-d14 (%)		88	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59612
Client ID: FT505-SW1
Extraction Date: NA
Date Analyzed: 12/13/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	1		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	1		B
1,2-Dichloroethane-d4 (%)		94	70-121	
Toluene-d8 (%)		91	81-117	
Bromofluorobenzene (%)		89	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59612
Client ID: FT505-SW1
Extraction Date: 12/13/99
Date Analyzed: 12/14/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	Not detected		U
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		70	23-120	
2-Fluorobiphenyl (%)		71	30-115	
Terphenyl-d14 (%)		84	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.
Volatile Organics in Soil
SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59613
Client ID: FT505-SW2
Extraction Date: NA
Date Analyzed: 12/13/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	1		
ethylbenzene	1	Not detected		U
m,p-xylene	1	1		
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
Naphthalene	1	Not detected		U
1,2-Dichloroethane-d4 (%)		93	70-121	
Toluene-d8 (%)		88	81-117	
Bromofluorobenzene (%)		88	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59613
Client ID: FT505-SW2
Extraction Date: 12/13/99
Date Analyzed: 12/14/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	Not detected		U
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		77	23-120	
2-Fluorobiphenyl (%)		81	30-115	
Terphenyl-d14 (%)		82	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.
Volatile Organics in Soil
SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59614
Client ID: FT505-SW3
Extraction Date: NA
Date Analyzed: 12/13/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	1		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	Not detected		U
1,2-Dichloroethane-d4 (%)		93	70-121	
Toluene-d8 (%)		91	81-117	
Bromofluorobenzene (%)		88	74-121	

Dilution Factor 1

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59614
Client ID: FT505-SW3
Extraction Date: 12/13/99
Date Analyzed: 12/14/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	Not detected		U
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		76	23-120	
2-Fluorobiphenyl (%)		79	30-115	
Terphenyl-d14 (%)		86	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.
Volatile Organics in Soil
SW-846 8260B

ite: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59615
Client ID: FT505-SW4
Extraction Date: NA
Date Analyzed: 12/13/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	1		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
aphthalene	1	2		B
2-Dichloroethane-d4 (%)		93	70-121	
Toluene-d8 (%)		87	81-117	
Bromofluorobenzene (%)		86	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.

DEC List 8270 BNs in Soil

EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59615
Client ID: FT505-SW4
Extraction Date: 12/13/99
Date Analyzed: 12/14/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	Not detected		U
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		76	23-120	
2-Fluorobiphenyl (%)		78	30-115	
Terphenyl-d14 (%)		86	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

Site: Fort Totten
Date Sampled: 12/01/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59611
Client ID: FT506-BE1
Extraction Date: NA
Date Analyzed: 12/06/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	5		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	1		
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	2		
1,2-Dichloroethane-d4 (%)		95	70-121	
Toluene-d8 (%)		84	81-117	
Bromofluorobenzene (%)		86	74-121	

Dilution Factor 1

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/01/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59611
Client ID: FT506-BE1
Extraction Date: 12/09/99
Date Analyzed: 12/10/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	98		J
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	73		J
fluoranthene	330	90		J
benzo[b]fluoranthene	330	86		J
benzo[k]fluoranthene	330	97		J
benzo[a]pyrene	330	103		J
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	83		J
Nitrobenzene-d5 (%)		66	23-120	
2-Fluorobiphenyl (%)		64	30-115	
Terphenyl-d14 (%)		64	18-137	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

Site: Fort Totten
Date Sampled: 12/01/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59607
Client ID: FT506-SW1
Extraction Date: NA
Date Analyzed: 12/06/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	5		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	2		
1,2-Dichloroethane-d4 (%)		83	70-121	
Toluene-d8 (%)		94	81-117	
Bromofluorobenzene (%)		91	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/01/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59607
Client ID: FT506-SW1
Extraction Date: 12/09/99
Date Analyzed: 12/10/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	86		J
pyrene	330	Not detected		U
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		63	23-120	
2-Fluorobiphenyl (%)		64	30-115	
Terphenyl-d14 (%)		67	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.
Volatile Organics in Soil
SW-846 8260B

Site: Fort Totten
Date Sampled: 12/01/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59608
Client ID: FT506-SW2
Extraction Date: NA
Date Analyzed: 12/06/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	3		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	2		
1,2-Dichloroethane-d4 (%)		83	70-121	
Toluene-d8 (%)		93	81-117	
Bromofluorobenzene (%)		91	74-121	

Dilution Factor 1

Waste Stream Technology, Inc.

DEC List 8270 BNs in Soil

EPA 8270

Site: Fort Totten
Date Sampled: 12/01/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59608
Client ID: FT506-SW2
Extraction Date: 12/09/99
Date Analyzed: 12/10/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	139		J
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	122		J
fluoranthene	330	138		J
benzo[b]fluoranthene	330	151		J
benzo[k]fluoranthene	330	156		J
benzo[a]pyrene	330	156		J
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	133		J
Nitrobenzene-d5 (%)		65	23-120	
2-Fluorobiphenyl (%)		64	30-115	
Terphenyl-d14 (%)		67	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

Site: Fort Totten
Date Sampled: 12/01/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59609
Client ID: FT506-SW3
Extraction Date: NA
Date Analyzed: 12/06/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	4		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	Not detected		U
1,2-Dichloroethane-d4 (%)		95	70-121	
Toluene-d8 (%)		91	81-117	
Bromofluorobenzene (%)		94	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

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Waste Stream Technology, Inc.

DEC List 8270 BNs in Soil

EPA 8270

Site: Fort Totten
Date Sampled: 12/01/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59609
Client ID: FT506-SW3
Extraction Date: 12/09/99
Date Analyzed: 12/10/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	87		J
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	83		J
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	88		J J
benzo[a]pyrene	330	83		J
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		69	23-120	
2-Fluorobiphenyl (%)		67	30-115	
Terphenyl-d14 (%)		67	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

Site: Fort Totten
Date Sampled: 12/01/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59610
Client ID: FT506-SW4
Extraction Date: NA
Date Analyzed: 12/06/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	3		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	6		
1,2-Dichloroethane-d4 (%)		88	70-121	
Toluene-d8 (%)		83	81-117	
Bromofluorobenzene (%)		85	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/01/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59610
Client ID: FT506-SW4
Extraction Date: 12/09/99
Date Analyzed: 12/10/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	163		J
pyrene	330	190		J
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	102		J
fluoranthene	330	217		J
benzo[b]fluoranthene	330	106		J
benzo[k]fluoranthene	330	126		J
benzo[a]pyrene	330	120		J
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	117		J
Nitrobenzene-d5 (%)		61	23-120	
2-Fluorobiphenyl (%)		62	30-115	
Terphenyl-d14 (%)		66	18-137	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59606
Client ID: FT512-BE1
Extraction Date: NA
Date Analyzed: 12/08/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	1		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	Not detected		U
1,2-Dichloroethane-d4 (%)		83	70-121	
Toluene-d8 (%)		87	81-117	
Bromofluorobenzene (%)		81	74-121	

Dilution Factor 1

Waste Stream Technology, Inc.

DEC List 8270 BNs in Soil

EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59606
Client ID: FT512-BE1
Extraction Date: 12/13/99
Date Analyzed: 12/14/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	149		J
pyrene	330	585		
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	342		
fluoranthene	330	649		
benzo[b]fluoranthene	330	411		
benzo[k]fluoranthene	330	491		
benzo[a]pyrene	330	494		
dibenzo[a,h]anthracene	330	113		J
benzo[g,h,i]perylene	330	249		J
indeno[1,2,3-cd]pyrene	330	252		J
naphthalene	330	Not detected		U
chrysene	330	396		
Nitrobenzene-d5 (%)		73	23-120	
2-Fluorobiphenyl (%)		80	30-115	
Terphenyl-d14 (%)		87	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.
Volatile Organics in Soil
SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59587
Client ID: FT512-SW1
Extraction Date: NA
Date Analyzed: 12/06/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	2		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	Not detected		U
1,2-Dichloroethane-d4 (%)		90	70-121	
Toluene-d8 (%)		86	81-117	
Bromofluorobenzene (%)		94	74-121	

Dilution Factor 1

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59587
Client ID: FT512-SW1
Extraction Date: 12/09/99
Date Analyzed: 12/10/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	Not detected		U
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		65	23-120	
2-Fluorobiphenyl (%)		63	30-115	
Terphenyl-d14 (%)		67	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59588
Client ID: FT512-SW2
Extraction Date: NA
Date Analyzed: 12/07/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	3		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	1		
1,2-Dichloroethane-d4 (%)		95	70-121	
Toluene-d8 (%)		92	81-117	
Bromofluorobenzene (%)		88	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

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Waste Stream Technology, Inc.

DEC List 8270 BNs in Soil

EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59588
Client ID: FT512-SW2
Extraction Date: 12/09/99
Date Analyzed: 12/10/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	253		J
pyrene	330	1170		
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	660		
fluoranthene	330	1140		
benzo[b]fluoranthene	330	914		
benzo[k]fluoranthene	330	775		J
benzo[a]pyrene	330	933		
dibenzo[a,h]anthracene	330	202		J J
benzo[g,h,i]perylene	330	415		
indeno[1,2,3-cd]pyrene	330	431		
naphthalene	330	Not detected		U
chrysene	330	805		
Nitrobenzene-d5 (%)		69	23-120	
2-Fluorobiphenyl (%)		66	30-115	
Terphenyl-d14 (%)		67	18-137	

Dilution Factor 1

WASTE STREAM

Waste Stream Technology, Inc.
Volatile Organics in Soil
SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59589
Client ID: FT512-SW3
Extraction Date: NA
Date Analyzed: 12/06/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	2		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	Not detected		U
1,2-Dichloroethane-d4 (%)		91	70-121	
Toluene-d8 (%)		83	81-117	
Bromofluorobenzene (%)		79	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.

DEC List 8270 BNs in Soil

EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59589
Client ID: FT512-SW3
Extraction Date: 12/09/99
Date Analyzed: 12/10/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	209		J
pyrene	330	1040		
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	650		
fluoranthene	330	1030		
benzo[b]fluoranthene	330	798		
benzo[k]fluoranthene	330	730		
benzo[a]pyrene	330	841		
dibenzo[a,h]anthracene	330	182		J
benzo[g,h,i]perylene	330	353		
indeno[1,2,3-cd]pyrene	330	371		
naphthalene	330	Not detected		U
chrysene	330	726		
Nitrobenzene-d5 (%)		67	23-120	
2-Fluorobiphenyl (%)		66	30-115	
Terphenyl-d14 (%)		66	18-137	

Dilution Factor 1

WASTESTREAM TECHNOLOGY

Waste Stream Technology, Inc.
Volatile Organics in Soil
SW-846 8260B

te: Fort Totten
ate Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59590
Client ID: FT512-SW4
Extraction Date: NA
Date Analyzed: 12/07/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	2		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	1		
-Dichloroethane-d4 (%)		88	70-121	
Toluene-d8 (%)		88	81-117	
Bromofluorobenzene (%)		84	74-121	

Dilution Factor 1

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59590
Client ID: FT512-SW4
Extraction Date: 12/09/99
Date Analyzed: 12/10/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	208		J
pyrene	330	1920		
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	1030		
fluoranthene	330	1390		
benzo[b]fluoranthene	330	1350		
benzo[k]fluoranthene	330	1050		
benzo[a]pyrene	330	1410		
dibenzo[a,h]anthracene	330	282		J
benzo[g,h,i]perylene	330	511		
indeno[1,2,3-cd]pyrene	330	567		
naphthalene	330	Not detected		U
chrysene	330	1100		
Nitrobenzene-d5 (%)		66	23-120	
2-Fluorobiphenyl (%)		65	30-115	
Terphenyl-d14 (%)		64	18-137	

Dilution Factor 1

WASTESTREAM TECHNOLOGY

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59600
Client ID: FT513-BE1
Extraction Date: NA
Date Analyzed: 12/08/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	5		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	Not detected		U
1,2-Dichloroethane-d4 (%)		83	70-121	
Toluene-d8 (%)		89	81-117	
Bromofluorobenzene (%)		85	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59600
Client ID: FT513-BE1
Extraction Date: 12/13/99
Date Analyzed: 12/13/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	139		J
pyrene	330	399		
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	244		J
fluoranthene	330	500		
benzo[b]fluoranthene	330	263		J
benzo[k]fluoranthene	330	278		J
benzo[a]pyrene	330	280		J
dibenzo[a,h]anthracene	330	75		J
benzo[g,h,i]perylene	330	149		J
indeno[1,2,3-cd]pyrene	330	154		J
naphthalene	330	Not detected		U
chrysene	330	268		J
Nitrobenzene-d5 (%)		73	23-120	
2-Fluorobiphenyl (%)		78	30-115	
Terphenyl-d14 (%)		84	18-137	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
Volatile Organics in Soil
SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59601
Client ID: FT513-SW1
Extraction Date: NA
Date Analyzed: 12/08/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	7		
ethylbenzene	1	Not detected		U
m,p-xylene	1	1		
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	3		
1,2-Dichloroethane-d4 (%)		95	70-121	
Toluene-d8 (%)		88	81-117	
Bromofluorobenzene (%)		86	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59601
Client ID: FT513-SW1
Extraction Date: 12/13/99
Date Analyzed: 12/14/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	151		J
fluorene	330	Not detected		U
phenanthrene	330	710		
pyrene	330	1410		
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	836		
fluoranthene	330	1740		
benzo[b]fluoranthene	330	956		
benzo[k]fluoranthene	330	956		
benzo[a]pyrene	330	946		
dibenzo[a,h]anthracene	330	193		J
benzo[g,h,i]perylene	330	322		J
indeno[1,2,3-cd]pyrene	330	354		
naphthalene	330	Not detected		U
chrysene	330	925		
Nitrobenzene-d5 (%)		80	23-120	
2-Fluorobiphenyl (%)		83	30-115	
Terphenyl-d14 (%)		85	18-137	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
Volatile Organics in Soil
SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59605
Client ID: FT513-SW1D
Extraction Date: NA
Date Analyzed: 12/08/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	7		
ethylbenzene	1	Not detected		U
m,p-xylene	1	1		
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	Not detected		U
1,2-Dichloroethane-d4 (%)		94	70-121	
Toluene-d8 (%)		84	81-117	
Bromofluorobenzene (%)		96	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59605
Client ID: FT513-SW1D
Extraction Date: 12/13/99
Date Analyzed: 12/14/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	85		J
fluorene	330	Not detected		U
phenanthrene	330	403		
pyrene	330	770		
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	455		
fluoranthene	330	977		
benzo[b]fluoranthene	330	449		
benzo[k]fluoranthene	330	518		
benzo[a]pyrene	330	502		
dibenzo[a,h]anthracene	330	128		J
benzo[g,h,i]perylene	330	253		J
indeno[1,2,3-cd]pyrene	330	265		J
naphthalene	330	Not detected		U
chrysene	330	486		
Nitrobenzene-d5 (%)		74	23-120	
2-Fluorobiphenyl (%)		80	30-115	
Terphenyl-d14 (%)		87	18-137	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
Volatile Organics in Soil
SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59602
Client ID: FT513-SW2
Extraction Date: NA
Date Analyzed: 12/08/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	3		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	1		
1,2-Dichloroethane-d4 (%)		92	70-121	
Toluene-d8 (%)		88	81-117	
Bromofluorobenzene (%)		88	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59602
Client ID: FT513-SW2
Extraction Date: 12/13/99
Date Analyzed: 12/14/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	Not detected		U
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	78		J
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	81		J
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		80	23-120	
2-Fluorobiphenyl (%)		83	30-115	
Terphenyl-d14 (%)		87	18-137	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
Volatile Organics in Soil
SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59603
Client ID: FT513-SW3
Extraction Date: NA
Date Analyzed: 12/08/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	1		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
naphthalene	1	Not detected		U
1,2-Dichloroethane-d4 (%)		84	70-121	
Toluene-d8 (%)		91	81-117	
Bromofluorobenzene (%)		87	74-121	

Dilution Factor 1

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59603
Client ID: FT513-SW3
Extraction Date: 12/13/99
Date Analyzed: 12/14/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	Not detected		U
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	Not detected		U
fluoranthene	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
naphthalene	330	Not detected		U
chrysene	330	Not detected		U
Nitrobenzene-d5 (%)		75	23-120	
2-Fluorobiphenyl (%)		79	30-115	
Terphenyl-d14 (%)		80	18-137	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.

Volatile Organics in Soil

SW-846 8260B

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59604
Client ID: FT513-SW4
Extraction Date: NA
Date Analyzed: 12/08/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
methyl-tert-butylether	1	Not detected		U
benzene	1	Not detected		U
toluene	1	2		
ethylbenzene	1	Not detected		U
m,p-xylene	1	Not detected		U
o-xylene	1	Not detected		U
isopropylbenzene	1	Not detected		U
n-propylbenzene	1	Not detected		U
1,3,5-trimethylbenzene	1	Not detected		U
tert-butylbenzene	1	Not detected		U
1,2,4-trimethylbenzene	1	Not detected		U
sec-butylbenzene	1	Not detected		U
p-isopropyltoluene	1	Not detected		U
n-butylbenzene	1	Not detected		U
Naphthalene	1	Not detected		U
1,2-Dichloroethane-d4 (%)		95	70-121	
Toluene-d8 (%)		88	81-117	
Bromofluorobenzene (%)		86	74-121	

Dilution Factor 1

Waste Stream Technology, Inc.
DEC List 8270 BNs in Soil
EPA 8270

Site: Fort Totten
Date Sampled: 12/02/99
Date Received: 12/03/99

Group Number: 9901-1927
Units: µg/Kg
Matrix: Soil

WST ID: WS59604
Client ID: FT513-SW4
Extraction Date: 12/13/99
Date Analyzed: 12/14/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
anthracene	330	Not detected		U
fluorene	330	Not detected		U
phenanthrene	330	Not detected		U
pyrene	330	163		J
acenaphthene	330	Not detected		U
benzo[a]anthracene	330	109		J
fluoranthene	330	188		J
benzo[b]fluoranthene	330	122		J
benzo[k]fluoranthene	330	156		J
benzo[a]pyrene	330	148		J
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	102		J
indeno[1,2,3-cd]pyrene	330	96		J
naphthalene	330	Not detected		U
chrysene	330	124		J
Nitrobenzene-d5 (%)		74	23-120	
2-Fluorobiphenyl (%)		81	30-115	
Terphenyl-d14 (%)		82	18-137	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
Volatile Organics in Solids
SW-846 8260B

te: Fort Totten - USTs
ate Sampled: 12/08/99
Date Received: 12/10/99

Group Number: 9901-1973
Units: µg/Kg
Matrix: Soil

WST ID: WS59873
Client ID: FT-WC
Extraction Date: NA
Date Analyzed: 12/15/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
chloromethane	10	Not detected		U
bromomethane	10	Not detected		U
vinyl chloride	10	Not detected		U
chloroethane	10	Not detected		U
methylene chloride	5	7		B
acetone	100	Not detected		U
carbon disulfide	5	Not detected		U
1,1-dichloroethene	5	Not detected		U
1,1-dichloroethane	5	Not detected		U
trans-1,2-dichloroethene	5	Not detected		U
chloroform	5	Not detected		U
2-butanone	100	Not detected		U
1,2-dichloroethane	5	Not detected		U
1,1,1-trichloroethane	5	Not detected		U
rbon tetrachloride	5	Not detected		U
yl acetate	50	Not detected		U
bromodichloromethane	5	Not detected		U
1,2-dichloropropane	5	Not detected		U
cis-1,3-dichloropropene	5	Not detected		U
trichloroethene	5	Not detected		U
benzene	5	Not detected		U
dibromochloromethane	5	Not detected		U
trans-1,3-dichloropropene	5	Not detected		U
1,1,2-trichloroethane	5	Not detected		U
2-chloroethylvinyl ether	10	Not detected		U
bromoform	5	Not detected		U
4-methyl-2-pentanone	50	Not detected		U
2-hexanone	50	Not detected		U
tetrachloroethene	5	Not detected		U
1,1,2,2-tetrachloroethane	5	Not detected		U
toluene	5	6		B
chlorobenzene	5	Not detected		U
ethylbenzene	5	53		
styrene	5	Not detected		U
m,p-xylene	5	22		
o-xylene	5	29		
1,2-Dichloroethane-d4 (%)		85	70-121	
luene-d8 (%)		85	81-117	
omofluorobenzene (%)		117	74-121	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
Semivolatile Organics in Solids
3550/8270

Site: Fort Totten - USTs
Date Sampled: 12/08/99
Date Received: 12/10/99

Group Number: 9901-1973
Units: µg/Kg
Matrix: Soil

WST ID: WS59873
Client ID: FT-WC
Extraction Date: 12/17/99
Date Analyzed: 12/20/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
phenol	330	Not detected		U
bis(2-chloroethyl)ether	330	Not detected		U
2-chlorophenol	330	Not detected		U
1,3-dichlorobenzene	330	Not detected		U
1,4-dichlorobenzene	330	Not detected		U
benzyl alcohol	660	Not detected		U
1,2-dichlorobenzene	330	Not detected		U
2-methylphenol	330	Not detected		U
bis(2-chloroisopropyl)ether	330	Not detected		U
3 & 4-methylphenol	330	Not detected		U
N-nitrosodi-n-propylamine	330	Not detected		U
hexachloroethane	330	Not detected		U
nitrobenzene	330	Not detected		U
isophorone	330	Not detected		U
2-nitrophenol	330	Not detected		U
2,4-dimethylphenol	330	Not detected		U
bis(2-chloroethoxy)methane	330	Not detected		U
benzoic acid	1650	Not detected		U
2,4-dichlorophenol	330	Not detected		U
1,2,4-trichlorobenzene	330	Not detected		U
naphthalene	330	1310		
4-chloroaniline	660	Not detected		U
hexachlorobutadiene	330	Not detected		U
4-chloro-3-methylphenol	660	Not detected		U
2-methylnaphthalene	330	7190		
hexachlorocyclopentadiene	330	Not detected		U
2,4,6-trichlorophenol	330	Not detected		U
2,4,5-trichlorophenol	330	Not detected		U
2-chloronaphthalene	330	Not detected		U
2-nitroaniline	1650	Not detected		U
dimethylphthalate	330	Not detected		U
acenaphthylene	330	Not detected		U
3-nitroaniline	1650	Not detected		U
2,6-dinitrotoluene	330	Not detected		U
acenaphthene	330	1100		
2,4-dinitrophenol	1650	Not detected		U
4-nitrophenol	1650	Not detected		U
dibenzofuran	330	983		
2,4-dinitrotoluene	330	Not detected		U
diethylphthalate	330	Not detected		U
fluorene	330	2070		

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.

Semivolatile Organics in Solids

3550/8270

Site: Fort Totten - USTs
Date Sampled: 12/08/99
Date Received: 12/10/99

Group Number: 9901-1973
Units: µg/Kg
Matrix: Soil

WST ID: WS59873
Client ID: FT-WC
Extraction Date: 12/17/99
Date Analyzed: 12/20/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
4-nitroaniline	1650	Not detected		U
4-chlorophenylphenylether	330	Not detected		U
4,6-dinitro 2-methylphenol	1650	Not detected		U
n-nitrosodiphenylamine	330	1670		
4-bromophenylphenylether	330	Not detected		U
hexachlorobenzene	330	Not detected		U
pentachlorophenol	1650	Not detected		U
phenanthrene	330	4500		
anthracene	330	690		
carbazole	330	494		
di-n-butylphthalate	330	Not detected		U
fluoranthene	330	312		J
benzidine	3300	Not detected		U
pyrene	330	466		
butylbenzylphthalate	330	Not detected		U
3,3'-dichlorobenzidine	660	Not detected		U
benzo(a)anthracene	330	Not detected		U
chrysene	330	112		J
bis(2-ethylhexyl)phthalate	330	Not detected		U
di-n-octylphthalate	330	Not detected		U
benzo[b]fluoranthene	330	Not detected		U
benzo[k]fluoranthene	330	Not detected		U
benzo[a]pyrene	330	Not detected		U
indeno[1,2,3-cd]pyrene	330	Not detected		U
dibenzo[a,h]anthracene	330	Not detected		U
benzo[g,h,i]perylene	330	Not detected		U
2-Fluorophenol (%)		81	25-121	
Phenol-d6 (%)		75	24-113	
Nitrobenzene-d5 (%)		100	23-120	
2-Fluorobiphenyl (%)		92	30-115	
2,4,6-Tribromophenol (%)		122	19-122	
Terphenyl-d14 (%)		66	18-137	

Dilution Factor 1

Waste Stream Technology, Inc.
Pesticides and PCBs in Soil
8081A/8082

Site: Fort Totten - USTs
Date Sampled: 12/08/99
Date Received: 12/10/99

Group Number: 9901-1973
Units: µg/Kg
Matrix: Soil

WST ID: WS59873
Client ID: FT-WC
Extraction Date: 12/16/99
Date Analyzed: 12/17/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
Alpha-BHC	0.5	Not detected		U
Beta-BHC	1.0	Not detected		U
Gamma-BHC (Lindane)	0.5	Not detected		U
Delta-BHC	1.6	Not detected		U
Heptachlor	3.2	Not detected		U
Aldrin	2.8	Not detected		U
Heptachlor Epoxide	1.4	Not detected		U
Endosulfan I	0.8	Not detected		U
Dieldrin	0.8	1.1		
4,4'-DDE	0.8	Not detected		U
Endrin	1.8	Not detected		U
Endosulfan II	1.0	Not detected		U
4,4'-DDD	0.9	Not detected		U
Endrin Aldehyde	1.3	Not detected		U
Endosulfan Sulfate	10	Not detected		U
4,4'-DDT	2.8	Not detected		U
Endrin Ketone	2.1	Not detected		U
Methoxychlor	1.0	Not detected		U
Toxaphene	51	Not detected		U
Chlordane	12	Not detected		U
Aroclor 1016	46	Not detected		U
Aroclor 1221	38	Not detected		U
Aroclor 1232	63	Not detected		U
Aroclor 1242	29	Not detected		U
Aroclor 1248	15	Not detected		U
Aroclor 1254	9.0	Not detected		U
Aroclor 1260	10	Not detected		U
Decachlorobiphenyl (%)		101	60-150	
Tetrachloro-m-xylene (%)		78	60-150	

Dilution Factor 1

Waste Stream Technology, Inc.
Herbicides in Soil
SW-846 8151

Site: Fort Totten - USTs
Date Sampled: 12/08/99
Date Received: 12/10/99

Group Number: 9901-1973
Units: mg/Kg
Matrix: Soil

WST ID: WS59873
Client ID: FT-WC
Extraction Date: 12/14/99
Date Analyzed: 12/22/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
dalapon	0.028	Not detected		U
dicamba	0.043	Not detected		U
dichloroprop	0.031	Not detected		U
2,4-D	0.059	Not detected		U
2,4,5-TP (Silvex)	0.026	Not detected		U
2,4,5-T	0.026	Not detected		U
MCPP	0.670	Not detected		U
MCPA	0.670	Not detected		U
2,4-DB	0.130	Not detected		U
dinoseb	0.200	Not detected		U
4-nitrophenol	0.200	Not detected		U
pentachlorophenol	0.026	Not detected		U
2,4-DCPAA (%)		98	10-127	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.

Diesel Range Organics in Soil

3550/8015B

Site: Fort Totten - USTs
Date Sampled: 12/08/99
Date Received: 12/10/99

Group Number: 9901-1973
Units: mg/Kg
Matrix: Soil

WST ID: WS59873
Client ID: FT-WC
Extraction Date: 12/21/99
Date Analyzed: 12/21/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
Diesel Range Organics C11-C24	24	427		
n-Pentacosane (%)		103	60-150	

Dilution Factor 1

Waste Stream Technology, Inc.

TCLP Volatile Organics Analysis

1311/8260B

Site: Fort Totten - USTs
Date Sampled: 12/08/99
Date Received: 12/10/99

Group Number: 9901-1973
Units: µg/L
Matrix: TCLP Extract

WST ID: WS59873
Client ID: FT-WC
TCLP Date: 12/20/99
Date Analyzed: 12/23/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
vinyl chloride	100	Not detected		U
1,1-dichloroethene	50	Not detected		U
chloroform	50	Not detected		U
2-butanone	1000	Not detected		U
1,2-dichloroethane	50	Not detected		U
carbon tetrachloride	50	Not detected		U
trichloroethene	50	Not detected		U
benzene	50	Not detected		U
tetrachloroethene	50	Not detected		U
chlorobenzene	50	Not detected		U
1,4-dichlorobenzene	50	Not detected		U
1,2-Dichloroethane-d4 (%)		88	70-121	
Toluene-d8 (%)		101	81-117	
Bromofluorobenzene (%)		94	74-121	

Dilution Factor 1

Waste Stream Technology, Inc.

8270 TCLP Semivolatile Organics

1311/8270

Site: Fort Totten - USTs
Date Sampled: 12/08/99
Date Received: 12/10/99
TCLP Extraction Date: 12/13/99

Group Number: 9901-1973
Units: µg/L
Matrix: TCLP Extract

WST ID WS59873
Client ID: FT-WC
Extraction Date: 12/20/99
Date Analyzed: 12/21/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
pyridine	10	Not detected		U
1,4-dichlorobenzene	10	Not detected		U
Total cresols(o,m & p)	30	Not detected		U
nitrobenzene	10	Not detected		U
hexachloroethane	10	Not detected		U
hexachlorobutadiene	10	Not detected		U
2,4,6-trichlorophenol	10	Not detected		U
2,4,5-trichlorophenol	10	Not detected		U
2,4-dinitrotoluene	10	Not detected		U
hexachlorobenzene	10	Not detected		U
pentachlorophenol	50	Not detected		U
2-Fluorophenol (%)		48	21-100	
Phenol-d6 (%)		34	10-94	
Nitrobenzene-d5 (%)		77	35-114	
2-Fluorobiphenyl (%)		82	43-116	
2,4,6-Tribromophenol (%)		92	10-123	
Terphenyl-d14 (%)		78	33-141	

Dilution Factor 1

Waste Stream Technology, Inc.

TCLP Pesticide Analysis

1311/8081

Site: Fort Totten - USTs
Date Sampled: 12/08/99
Date Received: 12/10/99
TCLP Extraction Date: 12/13/99

Group Number: 9901-1973
Units: µg/L
Matrix: TCLP Extract

WST ID WS59873
Client ID: FT-WC
Extraction Date: 12/20/99
Date Analyzed: 12/21/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
chlordane	0.350	Not detected		U
endrin	0.055	Not detected		U
gamma-BHC (Lindane)	0.016	Not detected		U
heptachlor	0.097	Not detected		U
heptachlor epoxide	0.042	Not detected		U
methoxychlor	0.031	Not detected		U
toxaphene	1.540	Not detected		U
Tetrachloro-m-xylene (%)		79	60-150	
Decachlorobiphenyl (%)		90	60-150	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
Herbicides in TCLP Extract
1311/8150

Site: Fort Totten - USTs
Date Sampled: 12/08/99
Date Received: 12/10/99
TCLP Extraction Date: 12/13/99

Group Number: 9901-1973
Units: mg/L
Matrix: TCLP Extract

WST ID WS59873
Client ID: FT-WC
Extraction Date: 12/14/99
Date Analyzed: 12/15/99

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
2,4-D	0.02	Not detected		U
2,4,5-TP (Silvex)	0.02	Not detected		U
2,4-DCPAA (%)		69	10-127	

Dilution Factor 1

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
TCLP Metals Analysis Result Report

Site: Fort Totten - USTs
Date Sampled: 12/08/99
Date Received: 12/10/99

Group Number: 9901-1973
Units: mg/L
Matrix: TCLP Extract
TCLP Extraction Date: 12/13/99

WST ID: WS59873
Client ID: FT-WC
Digestion Date: 12/14/99

Analyte	Detection Limit	Result	Date Analyzed	Analysis Method
Arsenic by ICP	0.045	Not detected	12/22/99	SW-846 6010
Barium by ICP	0.025	0.500	12/22/99	SW-846 6010
Cadmium by ICP	0.025	Not detected	12/22/99	SW-846 6010
Chromium by ICP	0.025	Not detected	12/22/99	SW-846 6010
Lead by ICP	0.075	0.295	12/22/99	SW-846 6010
Mercury by Cold Vapor	0.001	Not detected	12/16/99	SW-846 7470
Selenium by ICP	0.095	Not detected	12/22/99	SW-846 6010
Silver by ICP	0.025	Not detected	12/22/99	SW-846 6010

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
Wet Chemistry Analyses

Site: Fort Totten - USTs
Date Sampled: 12/08/99
Date Received: 12/10/99

Group Number: 9901-1973
Matrix: Soil

WST ID: WS59873
Client ID: FT-WC

Analysis	Method Reference	Detection Limit	Result	Units	Date Analyzed
Cyanide in Solids	SW-846 9010	0.125	Not detected	mg/Kg	12/14/99
Section 7.3.3.2 Reactive Cyanide	SW-846 9014	40.0	Not detected	mg/Kg	12/14/99
Section 7.3.4.2 Reactive Sulfide	SW-846 9034	40.0	Not detected	mg/Kg	12/14/99

Waste Stream Technology, Inc.
Wet Chemistry Analyses

Site: Fort Totten - USTs
Date Sampled: 12/08/99
Date Received: 12/10/99

Group Number: 9901-1973
Matrix: Soil

WST ID: WS59873
Client ID FT-WC

Analysis	Method Reference	Detection Limit	Result	Units	Date Analyzed
pH in Solid	SW-846 9045	NA	6.43	pH Units	12/13/99

Waste Stream Technology, Inc.
Wet Chemistry Analyses

Site: Fort Totten - USTs
Date Sampled: 12/08/99
Date Received: 12/10/99

Group Number: 9901-1973
Matrix: Soil

WST ID: WS59873
Client ID FT-WC

Analysis	Method Reference	Detection Limit	Result	Units	Date Analyzed
Ignitability (flash point)	SW-846 1010	NA	117	° F	12/13/99

Waste Stream Technology, Inc.
Wet Chemistry Analyses

e: Fort Totten - USTs
ate Sampled: 12/08/99
Date Received: 12/10/99

Group Number: 9901-1973
Matrix: Soil

WST ID: WS59873
Client ID FT-WC

Analysis	Method Reference	Detection Limit	Result	Units	Date Analyzed
Percent Solids	SM 2540 G	0.1	84.7	%	12/14/99

WASTE STREAM TECHNOLOGY

Waste Stream Technology, Inc.
Paint Filter Test
SW-846 9095

Site: Fort Totten - USTs
Date Sampled: 12/08/99
Date Received: 12/10/99

Group Number: 9901-1973
Matrix: Soil
Units: Pass/Fail

WST ID	Client ID	Result	Date Analyzed
WS59873	FT-WC	Passed	12/13/99

BUCK
ENVIRONMENTAL LABORATORIES, INC.
accredited environmental analysis

Report Date: *30-Dec-99*
Lab Log No: 9912225

CLIENT: WASTESTREAM TECHNOLOGY
302 GROTE STREET
BUFFALO, NY 14207-

Client Sample ID: WS59873
Sampled By: CLIENT
Collection Date: 12/8/99
Received at Lab: 12/16/99
Matrix: SOIL

Project:
Lab ID: 9912225-01A

Analyses	CAS	DF	PQL	Result	Units	Qual
EOX		Analyst: **IS**	Analysis Date: **12/28/99**			
Extractable Organic Halides		1	10	ND	µg/g	

NYSDOH ELAP #10795

John H. Buck, P.E.
Laboratory Director

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value exceeds quantitation range

3821 Buck Drive, Cortland, NY 13045-5150
Tel 607.753.3403 Fax 607.753.3415

Severn Trent Laboratories, Inc. - Baltimore
ANALYTICAL NARRATIVE

Client: IT Corporation
Site: Fort Totten
Project number: 70413.01

STL Baltimore Report: 001214
Laboratory Project Manager: Natasha K. Sullivan
Report Date: 6 October 2000

This report contains the results of the analysis of 19 soil samples collected on 12, 13, and 14 September 2000 in support of the referenced project.

SAMPLE RECEIPT

The samples arrived with custody seals absent by hand at Severn Trent Laboratories - Baltimore on 13 and 15 September 2000. Upon receipt, the samples were inspected and compared with the chain-of-custody records. The samples were then logged into the laboratory computer system with assigned laboratory accession numbers and released for analysis.

Client Sample Designation	STL - Baltimore Number
FT 430 SW2	0010201
FT 430 SW3	0010202
FT 430 SW4	0010203
FT424BE2	0010275
FT424SW1	0010276
FT424SW2	0010277
FT424SW3	0010278
FT424SW4	0010279
FT137SW1	0010280
FT137SW2	0010281
FT137SW3	0010282
FT137BE2	0010283
FT137BE2D	0010284
FT137SW4	0010285
FT141SW1	0010286
FT141SW2	0010287
FT141SW3	0010288
FT141SW4	0010289
FT141BE2	0010290

Following this narrative section are a glossary of data qualifiers (Tables 1), codes associated with manual integration of chromatographic peaks (Table 2), and the original chain-of-custody records. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

ANALYTICAL METHODS

Severn Trent Laboratories, Inc. - Baltimore
ANALYTICAL NARRATIVE

Client: IT Corporation
Site: Fort Totten
Project number: 70413.01

STL Baltimore Report: 001214
Laboratory Project Manager: Natasha K. Sullivan
Report Date: 6 October 2000

The analytical methods used by the laboratory are referenced by the STL Baltimore Method SOP which is formatted as STL-M-XXXXX-Y, where XXXXX is the reference method and Y is the SOP revision number. For example, analyses performed using EPA SW846 Method 8260B are identified as STL-M-8260B-3 where 3 is the laboratory SOP revision number. General Chemistry methods which are a consolidation of several reference methods, e.g. STL-M-CN for cyanide determinations, also include the identification of the specific reference method used for the analyses.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

- Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

- Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune, calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

- Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

VOLATILES by GC/MS - SOIL (ST0010201 -ST0010203, ST0010275 - ST00102790)

Sample Chronology: Nineteen samples and associated quality control were analyzed on 20, 21, and 22 September 2000 for the client specified list of analytes following the procedures specified in STL-M-5030A-1/STL-M-8260B-4. All Holding times were met .

Samples FT424BE2, FT137 SW4, FT141 SW1, FT141 SW2, FT141 SW3, and FT141 BE2 required medium level extraction and analysis (125X dilution) to bring the concentrations of target analytes within instrument calibration range.

Severn Trent Laboratories, Inc. - Baltimore
ANALYTICAL NARRATIVE

Client: **IT Corporation**
Site: **Fort Totten**
Project number: **70413.01**

STL Baltimore Report: **001214**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **6 October 2000**

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples with the following exception:

The Laboratory Control Standards (VL009211 and VL009221) had the surrogate recovery for toluene-d8 (123% and 115%) above the upper laboratory limit of 114%.

Sample Performance: All quality control criteria were met for the reported samples with the following exception:

Samples FT141 SW2, FT141 SW3, FT141 BE2, FT141 SW1, FT137 SW2, FT137 SW3, FT137 BE2, FT1237 BE2 D, FT137 SW4, (as well as the MS/MSD's performed on samples FT141 SW4, FT424 SW2, FT137 SW1 and FT141 BE2) had one or more surrogate recoveries outside the laboratory QC limits. The samples were reanalyzed with similar results indicating a probable matrix influence.

The batch MS/MSD, performed on sample FT137 SW1, had the recoveries of toluene (136%/140%) above the upper laboratory limit of 130%.

The batch MS/MSD, performed on sample FT141 BE2, had the recoveries of benzene (138%/167%) above the upper laboratory limit of 128%. The MSD, also had the recovery of toluene (133%) above the upper laboratory limit of 130%. The relative percent difference between the MS/MSD recovery of toluene (32%) was above the laboratory QC limit of 26%.

Samples FT430 SW4, FT141 SW2, FT141 SW3, FT141 BE2, FT137 SW2, FT137 SW3, (as well as the batch MS/MSD, performed on sample FT141 SW4, and the batch MSD, performed on sample FT424 SW2) had one or more internal standard areas below the lower laboratory QC limit of -25% of the daily calibration standard.

The initial analysis performed on sample FT141 SW3 had internal standards and surrogates outside the laboratory limits. The sample was reanalyzed and had target analytes exceeding the calibration range. The sample was reanalyzed again by medium level analysis and met QC criteria. All three analyses have been included in the report.

SEMIVOLATILES by GC/MS - SOIL (STL0010201 - STL0010203; STL0010275 - STL0010290)

Sample Chronology: Nineteen samples and associated quality control were extracted on 18 September 2000 following the procedures specified in STL-M-3540C-2. The resultant extracts were analyzed from 22 through 29 September 2000 for the client specified list of analytes following the procedures specified in the STL-M-8270C-2. All holding times were met.

Severn Trent Laboratories, Inc. - Baltimore
ANALYTICAL NARRATIVE

Client: IT Corporation
Site: Fort Totten
Project number: 70413.01

STL Baltimore Report: 001214
Laboratory Project Manager: Natasha K. Sullivan
Report Date: 6 October 2000

Samples FT137SW3, FT137BE2D, FT137SW4, FT141SW1, FT141SW3 and FT141BE2 were re-analyzed at dilutions to bring the extract concentrations of target analytes within the instrument calibration range. Both the undiluted and diluted analyses have been included in this report.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

Due to matrix interferences, several samples had surrogate recoveries outside the laboratory QC limits. The recoveries for all surrogates in the method blank and LCS were within QC limits, indicating acceptable method performance.

Due to significant matrix interferences, several samples had the areas for one or more internal standards below the lower QC limit of 50% of the referenced calibration standard. These low areas may indicate a bias for target analytes that use them for quantitation. The areas for all internal standards in the method blank and LCS were within QC limits, indicating acceptable method performance.

CERTIFICATION OF RESULTS

The Laboratory certifies that the reported results relate only to those samples tested and that this report meets the project requirements for analytical data as stated in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in STL Baltimore's Quality Assurance program for other than the conditions detailed above. Release of the data contained in this report has been authorized by the Laboratory Project Manager as verified by the following signature.

______________________________ October 6, 2000
Natasha K. Sullivan, Laboratory Project Manager

TABLE 1. LABORATORY ORGANIC ANALYSIS DATA QUALIFIERS [1]

Qualifiers other than those listed below may be required to properly define the results. If used, they are given an alphabetic designation not already specified in this table or in a project/program document. such as a Quality Assurance Project Plan or a contract Statement of Work. Each additional qualifier is fully described in the Analytical Narrative section of the laboratory report.

U Indicates a target compound was analyzed for but not detected. The sample Reporting Limit (RL) is corrected for dilution and, if a soil sample, for percent moisture, if reported on a dry weight basis.

J Indicates an estimated value. This qualifier is used under the following circumstances:

1) when estimating a concentration for tentatively identified compounds (TICs) in GC/MS analyses, where a 1:1 response is assumed,
2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the RL but greater than the method detection limit (MDL).

B This qualifier is used when the analyte is found in the associated method blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. For GC/MS analyses, this qualifier is used for a TIC, as well as, for a positively identified target compound.

E This qualifier identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.

D When applied, this qualifier identifies all compound concentrations reported from a secondary dilution analysis.

A This qualifier indicates that a TIC is a suspected aldol-condensation product.

N Indicates presumptive evidence of a compound. This qualifier is only used for GC/MS TICs, where the identification is based on a mass spectral library search. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N qualifier is not used.

P When applied, this qualifier indicates a reported value from a GC analysis when there is greater than 25% difference for detected concentrations between the two GC columns.

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(1) These Data Qualifiers are added by the laboratory to provide additional information for the reported results. ***They should not be confused with the qualifiers applied to the reported data as a result of a data validation process performed independently of the laboratory reporting procedure.***

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT137 BE2RE

Lab Name: STL BALTIMORE Contract: 001214

Lab Code: ST LABS Case No.: ____ SAS No.: ____ SDG No.: ____

Matrix: (soil/water) SOIL Lab Sample ID: 0010283RE

Sample wt/vol: 1.1 (g/ml) G Lab File ID: VA1C8943.D

Level: (low/med) LOW Date Received: 9/15/00

% Moisture: not dec. 25 Date Analyzed: 9/22/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: ____ (uL) Soil Aliquot Volume: ____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
1634-04-4	Methyl t-butyl ether	12	U
71-43-2	Benzene	12	U
108-88-3	Toluene	18	U
103-65-1	n-Propylbenzene	6	U
98-82-8	Isopropylbenzene	29	
100-41-4	Ethylbenzene	12	U
106-42-3	m&p Xylenes	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylenes (total)	12	U
108-67-8	1,3,5-Trimethylbenzene	6	U
98-06-6	tert-Butylbenzene	6	U
95-63-6	1,2,4-Trimethylbenzene	6	U
135-98-8	sec-Butylbenzene	6	U
99-87-6	p-Isopropyltoluene	280	
104-51-8	n-Butylbenzene	6	U
91-20-3	Naphthalene	6	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT137BE2DL

Lab Name: STL BALTIMORE Contract: -

Lab Code: ____ Case No.: ____ SAS No.: ____ SDG No.: ____

Matrix: (soil/water) SOIL Lab Sample ID: 0010283DL

Sample wt/vol: 28.9 (g/ml) G Lab File ID: SC3D1973.D

Level: (low/med) LOW Date Received: 09/13/00

% Moisture: 25 decanted:(Y/N) N Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/26/00

Injection Volume: 1.0 (uL) Dilution Factor: 3.0

GPC Cleanup: (Y/N) N pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	2900	D
83-32-9	Acenaphthene	3300	D
86-73-7	Fluorene	5900	D
85-01-8	Phenanthrene	9300	D
120-12-7	Anthracene	460	JD
206-44-0	Fluoranthene	740	JD
129-00-0	Pyrene	2000	D
56-55-3	Benzo(a)anthracene	290	JD
218-01-9	Chrysene	550	JD
205-99-2	Benzo(b)fluoranthene	390	JD
207-08-9	Benzo(k)fluoranthene	200	JD
50-32-8	Benzo(a)pyrene	290	JD
193-39-5	Indeno(1,2,3-cd)pyrene	1400	U
53-70-3	Dibenz(a,h)anthracene	1400	U
191-24-2	Benzo(g,h,i)perylene	150	JD

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT137 BE2 D

Lab Name: STL BALTIMORE Contract: 001214

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010284RE

Sample wt/vol: 1.0 (g/ml) G Lab File ID: VA1C8939.D

Level: (low/med) LOW Date Received: 9/15/00

% Moisture: not dec. 27 Date Analyzed: 9/22/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
1634-04-4	Methyl t-butyl ether	14	U
71-43-2	Benzene	14	U
108-88-3	Toluene	21	U
103-65-1	n-Propylbenzene	7	U
98-82-8	Isopropylbenzene	7	U
100-41-4	Ethylbenzene	14	U
106-42-3	m&p Xylenes	14	U
95-47-6	o-Xylene	14	U
1330-20-7	Xylenes (total)	14	U
108-67-8	1,3,5-Trimethylbenzene	7	U
98-06-6	tert-Butylbenzene	7	U
95-63-6	1,2,4-Trimethylbenzene	7	U
135-98-8	sec-Butylbenzene	7	U
99-87-6	p-Isopropyltoluene	370	
104-51-8	n-Butylbenzene	7	U
91-20-3	Naphthalene	7	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT137BE2DDL

Lab Name: STL BALTIMORE Contract:

Lab Code: ______ Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010284DL

Sample wt/vol: 29.6 (g/ml) G Lab File ID: SC3D1974.D

Level: (low/med) LOW Date Received: 09/13/00

% Moisture: 27 decanted:(Y/N) N Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/26/00

Injection Volume: 1.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ______

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	27000	D
83-32-9	Acenaphthene	11000	D
86-73-7	Fluorene	17000	D
85-01-8	Phenanthrene	30000	D
120-12-7	Anthracene	1200	JD
206-44-0	Fluoranthene	1500	JD
129-00-0	Pyrene	4500	JD
56-55-3	Benzo(a)anthracene	520	JD
218-01-9	Chrysene	1100	JD
205-99-2	Benzo(b)fluoranthene	4600	U
207-08-9	Benzo(k)fluoranthene	4600	U
50-32-8	Benzo(a)pyrene	480	JD
193-39-5	Indeno(1,2,3-cd)pyrene	4600	U
53-70-3	Dibenz(a,h)anthracene	4600	U
191-24-2	Benzo(g,h,i)perylene	4600	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT137 SW1

Lab Name: STL BALTIMORE Contract: 001214

Lab Code: ST LABS Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010280

Sample wt/vol: 5.0 (g/ml) G Lab File ID: VA1C8934.D

Level: (low/med) LOW Date Received: 9/15/00

% Moisture: not dec. 43 Date Analyzed: 9/22/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
1634-04-4	Methyl t-butyl ether	4	U
71-43-2	Benzene	4	U
108-88-3	Toluene	5	U
103-65-1	n-Propylbenzene	2	U
98-82-8	Isopropylbenzene	2	U
100-41-4	Ethylbenzene	4	U
106-42-3	m&p Xylenes	4	U
95-47-6	o-Xylene	4	U
1330-20-7	Xylenes (total)	4	U
108-67-8	1,3,5-Trimethylbenzene	2	U
98-06-6	tert-Butylbenzene	2	U
95-63-6	1,2,4-Trimethylbenzene	2	U
135-98-8	sec-Butylbenzene	2	U
99-87-6	p-Isopropyltoluene	2	U
104-51-8	n-Butylbenzene	2	U
91-20-3	Naphthalene	2	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT137SW1

Lab Name: STL BALTIMORE Contract: -

Lab Code: ______ Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010280

Sample wt/vol: 29.5 (g/ml) G Lab File ID: SC3D1949.D

Level: (low/med) LOW Date Received: 09/13/00

% Moisture: 43 decanted:(Y/N) N Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/23/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ______

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
91-20-3	Naphthalene	380	J
83-32-9	Acenaphthene	590	U
86-73-7	Fluorene	590	U
85-01-8	Phenanthrene	120	J
120-12-7	Anthracene	590	U
206-44-0	Fluoranthene	83	J
129-00-0	Pyrene	150	J
56-55-3	Benzo(a)anthracene	92	J
218-01-9	Chrysene	230	J
205-99-2	Benzo(b)fluoranthene	89	J
207-08-9	Benzo(k)fluoranthene	590	U
50-32-8	Benzo(a)pyrene	180	J
193-39-5	Indeno(1,2,3-cd)pyrene	590	U
53-70-3	Dibenz(a,h)anthracene	590	U
191-24-2	Benzo(g,h,i)perylene	130	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT137 SW2RE

Lab Name: STL BALTIMORE Contract: 001214

Lab Code: ST LABS Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010281RE

Sample wt/vol: 5.1 (g/ml) G Lab File ID: VA1C8935.D

Level: (low/med) LOW Date Received: 9/15/00

% Moisture: not dec. 23 Date Analyzed: 9/22/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
1634-04-4	Methyl t-butyl ether	2	U
71-43-2	Benzene	2	U
108-88-3	Toluene	4	U
103-65-1	n-Propylbenzene	1	U
98-82-8	Isopropylbenzene	1	U
100-41-4	Ethylbenzene	2	U
106-42-3	m&p Xylenes	2	U
95-47-6	o-Xylene	2	U
1330-20-7	Xylenes (total)	2	U
108-67-8	1,3,5-Trimethylbenzene	1	U
98-06-6	tert-Butylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
135-98-8	sec-Butylbenzene	1	U
99-87-6	p-Isopropyltoluene	1	U
104-51-8	n-Butylbenzene	1	U
91-20-3	Naphthalene	1	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT137SW2

Lab Name: STL BALTIMORE Contract:

Lab Code: ____ Case No.: ____ SAS No.: ____ SDG No.: ____

Matrix: (soil/water) SOIL Lab Sample ID: 0010281

Sample wt/vol: 29.4 (g/ml) G Lab File ID: SC3D1950.D

Level: (low/med) LOW Date Received: 09/13/00

% Moisture: 23 decanted:(Y/N) N Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/23/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ____

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
91-20-3	Naphthalene	210	J
83-32-9	Acenaphthene	440	U
86-73-7	Fluorene	53	J
85-01-8	Phenanthrene	780	
120-12-7	Anthracene	210	J
206-44-0	Fluoranthene	1400	
129-00-0	Pyrene	1500	
56-55-3	Benzo(a)anthracene	940	
218-01-9	Chrysene	1400	
205-99-2	Benzo(b)fluoranthene	1200	
207-08-9	Benzo(k)fluoranthene	990	
50-32-8	Benzo(a)pyrene	1100	
193-39-5	Indeno(1,2,3-cd)pyrene	880	
53-70-3	Dibenz(a,h)anthracene	230	J
191-24-2	Benzo(g,h,i)perylene	830	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT137 SW3RE

Lab Name: STL BALTIMORE Contract: 001214

Lab Code: ST LABS Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010282RE

Sample wt/vol: 1.1 (g/ml) G Lab File ID: VA1C8942.D

Level: (low/med) LOW Date Received: 9/15/00

% Moisture: not dec. 25 Date Analyzed: 9/22/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
1634-04-4	Methyl t-butyl ether	12	U
71-43-2	Benzene	12	U
108-88-3	Toluene	18	U
103-65-1	n-Propylbenzene	6	U
98-82-8	Isopropylbenzene	6	U
100-41-4	Ethylbenzene	12	U
106-42-3	m&p Xylenes	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylenes (total)	12	U
108-67-8	1,3,5-Trimethylbenzene	6	U
98-06-6	tert-Butylbenzene	6	U
95-63-6	1,2,4-Trimethylbenzene	6	U
135-98-8	sec-Butylbenzene	6	U
99-87-6	p-Isopropyltoluene	6	U
104-51-8	n-Butylbenzene	6	U
91-20-3	Naphthalene	6	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT137SW3DL

Lab Name: STL BALTIMORE Contract: -

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010282DL

Sample wt/vol: 29.7 (g/ml) G Lab File ID: SC3D1972.D

Level: (low/med) LOW Date Received: 09/13/00

% Moisture: 25 decanted:(Y/N) N Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/26/00

Injection Volume: 1.0 (uL) Dilution Factor: 3.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	4500	D
83-32-9	Acenaphthene	3600	D
86-73-7	Fluorene	4500	D
85-01-8	Phenanthrene	8200	D
120-12-7	Anthracene	1100	JD
206-44-0	Fluoranthene	2600	D
129-00-0	Pyrene	3300	D
56-55-3	Benzo(a)anthracene	1300	JD
218-01-9	Chrysene	1700	D
205-99-2	Benzo(b)fluoranthene	1400	D
207-08-9	Benzo(k)fluoranthene	1200	JD
50-32-8	Benzo(a)pyrene	1400	D
193-39-5	Indeno(1,2,3-cd)pyrene	890	JD
53-70-3	Dibenz(a,h)anthracene	280	JD
191-24-2	Benzo(g,h,i)perylene	850	JD

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT137 SW4DL

Lab Name: STL BALTIMORE Contract: 001214

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010285DL

Sample wt/vol: 4.0 (g/ml) G Lab File ID: VC3A8489.D

Level: (low/med) MED Date Received: 9/15/00

% Moisture: not dec. 18 Date Analyzed: 9/22/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1634-04-4	Methyl t-butyl ether	300	U
71-43-2	Benzene	300	U
108-88-3	Toluene	460	U
103-65-1	n-Propylbenzene	150	U
98-82-8	Isopropylbenzene	150	U
100-41-4	Ethylbenzene	300	U
106-42-3	m&p Xylenes	300	U
95-47-6	o-Xylene	300	U
1330-20-7	Xylenes (total)	300	U
108-67-8	1,3,5-Trimethylbenzene	420	
98-06-6	tert-Butylbenzene	150	U
95-63-6	1,2,4-Trimethylbenzene	640	
135-98-8	sec-Butylbenzene	14000	
99-87-6	p-Isopropyltoluene	6300	
104-51-8	n-Butylbenzene	9700	
91-20-3	Naphthalene	4800	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT137SW4DL

Lab Name: STL BALTIMORE Contract: -

Lab Code: ______ Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010285DL

Sample wt/vol: 29.4 (g/ml) G Lab File ID: SC3D1975.D

Level: (low/med) LOW Date Received: 09/13/00

% Moisture: 18 decanted:(Y/N) N Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/26/00

Injection Volume: 1.0 (uL) Dilution Factor: 8.0

GPC Cleanup: (Y/N) N pH: ______

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
91-20-3	Naphthalene	7700	D
83-32-9	Acenaphthene	4000	D
86-73-7	Fluorene	11000	D
85-01-8	Phenanthrene	21000	D
120-12-7	Anthracene	1100	JD
206-44-0	Fluoranthene	710	JD
129-00-0	Pyrene	3100	JD
56-55-3	Benzo(a)anthracene	3300	U
218-01-9	Chrysene	650	JD
205-99-2	Benzo(b)fluoranthene	3300	U
207-08-9	Benzo(k)fluoranthene	3300	U
50-32-8	Benzo(a)pyrene	3300	U
193-39-5	Indeno(1,2,3-cd)pyrene	3300	U
53-70-3	Dibenz(a,h)anthracene	3300	U
191-24-2	Benzo(g,h,i)perylene	3300	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT141 BE2DL

Lab Name: STL BALTIMORE Contract: 001214

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010290DL

Sample wt/vol: 4.1 (g/ml) G Lab File ID: VC3A8493.D

Level: (low/med) MED Date Received: 9/15/00

% Moisture: not dec. 15 Date Analyzed: 9/22/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
1634-04-4	Methyl t-butyl ether	290	U
71-43-2	Benzene	290	U
108-88-3	Toluene	430	U
103-65-1	n-Propylbenzene	1800	
98-82-8	Isopropylbenzene	140	U
100-41-4	Ethylbenzene	290	U
106-42-3	m&p Xylenes	290	U
95-47-6	o-Xylene	290	U
1330-20-7	Xylenes (total)	290	U
108-67-8	1,3,5-Trimethylbenzene	140	U
98-06-6	tert-Butylbenzene	140	U
95-63-6	1,2,4-Trimethylbenzene	1700	
135-98-8	sec-Butylbenzene	1600	
99-87-6	p-Isopropyltoluene	490	
104-51-8	n-Butylbenzene	2000	
91-20-3	Naphthalene	14000	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT141BE2DL

Lab Name: STL BALTIMORE Contract: -

Lab Code: ______ Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010290DL

Sample wt/vol: 30.9 (g/ml) G Lab File ID: SC3D1956.D

Level: (low/med) LOW Date Received: 09/13/00

% Moisture: 15 decanted:(Y/N) N Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/23/00

Injection Volume: 1.0 (uL) Dilution Factor: 3.0

GPC Cleanup: (Y/N) N pH: ______

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
91-20-3	Naphthalene	9900	D
83-32-9	Acenaphthene	2000	D
86-73-7	Fluorene	3800	D
85-01-8	Phenanthrene	7800	D
120-12-7	Anthracene	650	JD
206-44-0	Fluoranthene	990	JD
129-00-0	Pyrene	950	JD
56-55-3	Benzo(a)anthracene	270	JD
218-01-9	Chrysene	320	JD
205-99-2	Benzo(b)fluoranthene	220	JD
207-08-9	Benzo(k)fluoranthene	190	JD
50-32-8	Benzo(a)pyrene	200	JD
193-39-5	Indeno(1,2,3-cd)pyrene	1100	U
53-70-3	Dibenz(a,h)anthracene	1100	U
191-24-2	Benzo(g,h,i)perylene	1100	U

040266

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT141 SW1DL

Lab Name: STL BALTIMORE Contract: 001214

Lab Code: ST LABS Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010286DL

Sample wt/vol: 4.1 (g/ml) G Lab File ID: VC3A8490.D

Level: (low/med) MED Date Received: 9/15/00

% Moisture: not dec. 20 Date Analyzed: 9/22/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
1634-04-4	Methyl t-butyl ether	300	U
71-43-2	Benzene	300	U
108-88-3	Toluene	460	U
103-65-1	n-Propylbenzene	150	U
98-82-8	Isopropylbenzene	150	U
100-41-4	Ethylbenzene	300	U
106-42-3	m&p Xylenes	300	U
95-47-6	o-Xylene	300	U
1330-20-7	Xylenes (total)	300	U
108-67-8	1,3,5-Trimethylbenzene	150	U
98-06-6	tert-Butylbenzene	150	U
95-63-6	1,2,4-Trimethylbenzene	150	U
135-98-8	sec-Butylbenzene	150	U
99-87-6	p-Isopropyltoluene	150	U
104-51-8	n-Butylbenzene	700	
91-20-3	Naphthalene	6200	

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
FT141SW1DL

Lab Name: STL BALTIMORE Contract: -

Lab Code: ____ Case No.: ____ SAS No.: ____ SDG No.: ____

Matrix: (soil/water) SOIL Lab Sample ID: 0010286DL

Sample wt/vol: 30.6 (g/ml) G Lab File ID: SC3D1976.D

Level: (low/med) LOW Date Received: 09/13/00

% Moisture: 20 decanted:(Y/N) N Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/26/00

Injection Volume: 1.0 (uL) Dilution Factor: 6.0

GPC Cleanup: (Y/N) N pH: ____

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
91-20-3	Naphthalene	690	JD
83-32-9	Acenaphthene	6600	D
86-73-7	Fluorene	10000	D
85-01-8	Phenanthrene	16000	D
120-12-7	Anthracene	1400	JD
206-44-0	Fluoranthene	1800	JD
129-00-0	Pyrene	2200	JD
56-55-3	Benzo(a)anthracene	620	JD
218-01-9	Chrysene	770	JD
205-99-2	Benzo(b)fluoranthene	530	JD
207-08-9	Benzo(k)fluoranthene	500	JD
50-32-8	Benzo(a)pyrene	550	JD
193-39-5	Indeno(1,2,3-cd)pyrene	270	JD
53-70-3	Dibenz(a,h)anthracene	2500	U
191-24-2	Benzo(g,h,i)perylene	270	JD

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT141 SW2DL

Lab Name: STL BALTIMORE Contract: 001214

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010287DL

Sample wt/vol: 4.1 (g/ml) G Lab File ID: VC3A8491.D

Level: (low/med) MED Date Received: 9/15/00

% Moisture: not dec. 23 Date Analyzed: 9/22/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1634-04-4	Methyl t-butyl ether	320	U
71-43-2	Benzene	320	U
108-88-3	Toluene	480	U
103-65-1	n-Propylbenzene	1300	
98-82-8	Isopropylbenzene	160	U
100-41-4	Ethylbenzene	320	U
106-42-3	m&p Xylenes	320	U
95-47-6	o-Xylene	320	U
1330-20-7	Xylenes (total)	320	U
108-67-8	1,3,5-Trimethylbenzene	160	U
98-06-6	tert-Butylbenzene	160	U
95-63-6	1,2,4-Trimethylbenzene	160	U
135-98-8	sec-Butylbenzene	1500	
99-87-6	p-Isopropyltoluene	160	U
104-51-8	n-Butylbenzene	2100	
91-20-3	Naphthalene	15000	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT141SW2

Lab Name: STL BALTIMORE   Contract: --

Lab Code: ______   Case No.: ______   SAS No.: ______   SDG No.: ______

Matrix: (soil/water) SOIL   Lab Sample ID: 0010287

Sample wt/vol: 29.5 (g/ml) G   Lab File ID: SC3D1942.D

Level: (low/med) LOW   Date Received: 09/13/00

% Moisture: 23   decanted:(Y/N) N   Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL)   Date Analyzed: 09/23/00

Injection Volume: 1.0 (uL)   Dilution Factor: 1.0

GPC Cleanup: (Y/N) N   pH: ______

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	910	
83-32-9	Acenaphthene	490	
86-73-7	Fluorene	580	
85-01-8	Phenanthrene	1100	
120-12-7	Anthracene	78	J
206-44-0	Fluoranthene	64	J
129-00-0	Pyrene	62	J
56-55-3	Benzo(a)anthracene	440	U
218-01-9	Chrysene	440	U
205-99-2	Benzo(b)fluoranthene	440	U
207-08-9	Benzo(k)fluoranthene	440	U
50-32-8	Benzo(a)pyrene	440	U
193-39-5	Indeno(1,2,3-cd)pyrene	440	U
53-70-3	Dibenz(a,h)anthracene	440	U
191-24-2	Benzo(g,h,i)perylene	440	U

EPA SAMPLE NO.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FT141 SW3DL

Lab Name: STL BALTIMORE Contract: 001214

Lab Code: ST LABS Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010288DL

Sample wt/vol: 4.1 (g/ml) G Lab File ID: VC3A8492.D

Level: (low/med) MED Date Received: 9/15/00

% Moisture: not dec. 16 Date Analyzed: 9/22/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
1634-04-4	Methyl t-butyl ether	290	U
71-43-2	Benzene	290	U
108-88-3	Toluene	440	U
103-65-1	n-Propylbenzene	2300	
98-82-8	Isopropylbenzene	1800	
100-41-4	Ethylbenzene	290	U
106-42-3	m&p Xylenes	290	U
95-47-6	o-Xylene	290	U
1330-20-7	Xylenes (total)	290	U
108-67-8	1,3,5-Trimethylbenzene	150	U
98-06-6	tert-Butylbenzene	150	U
95-63-6	1,2,4-Trimethylbenzene	150	U
135-98-8	sec-Butylbenzene	3100	
99-87-6	p-Isopropyltoluene	150	U
104-51-8	n-Butylbenzene	3600	
91-20-3	Naphthalene	150	U

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT141SW3DL

Lab Name: STL BALTIMORE Contract: -

Lab Code: ______ Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010288DL

Sample wt/vol: 30.7 (g/ml) G Lab File ID: SC3D1957.D

Level: (low/med) LOW Date Received: 09/13/00

% Moisture: 16 decanted:(Y/N) N Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/23/00

Injection Volume: 1.0 (uL) Dilution Factor: 8.0

GPC Cleanup: (Y/N) N pH: ______

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	3100	U
83-32-9	Acenaphthene	3800	D
86-73-7	Fluorene	8500	D
85-01-8	Phenanthrene	17000	D
120-12-7	Anthracene	1300	JD
206-44-0	Fluoranthene	1400	JD
129-00-0	Pyrene	1400	JD
56-55-3	Benzo(a)anthracene	390	JD
218-01-9	Chrysene	380	JD
205-99-2	Benzo(b)fluoranthene	3100	U
207-08-9	Benzo(k)fluoranthene	3100	U
50-32-8	Benzo(a)pyrene	3100	U
193-39-5	Indeno(1,2,3-cd)pyrene	3100	U
53-70-3	Dibenz(a,h)anthracene	3100	U
191-24-2	Benzo(g,h,i)perylene	3100	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT141 SW4

Lab Name: STL BALTIMORE Contract: 001214

Lab Code: ST LABS Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010289

Sample wt/vol: 5.2 (g/ml) G Lab File ID: VA1C8890.D

Level: (low/med) LOW Date Received: 9/15/00

% Moisture: not dec. 14 Date Analyzed: 9/20/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
1634-04-4	Methyl t-butyl ether	2	U
71-43-2	Benzene	2	U
108-88-3	Toluene	3	U
103-65-1	n-Propylbenzene	1	U
98-82-8	Isopropylbenzene	1	U
100-41-4	Ethylbenzene	2	U
106-42-3	m&p Xylenes	2	U
95-47-6	o-Xylene	2	U
1330-20-7	Xylenes (total)	2	U
108-67-8	1,3,5-Trimethylbenzene	1	U
98-06-6	tert-Butylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
135-98-8	sec-Butylbenzene	1	U
99-87-6	p-Isopropyltoluene	1	U
104-51-8	n-Butylbenzene	1	U
91-20-3	Naphthalene	1	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT141SW4

Lab Name: STL BALTIMORE Contract: -

Lab Code: ______ Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010289

Sample wt/vol: 31.3 (g/ml) G Lab File ID: SC3D1943.D

Level: (low/med) LOW Date Received: 09/13/00

% Moisture: 14 decanted:(Y/N) N Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/23/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ______

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	370	U
83-32-9	Acenaphthene	370	U
86-73-7	Fluorene	370	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenz(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT424 BE2DL

Lab Name: STL BALTIMORE Contract: 001214

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010275DL

Sample wt/vol: 4.1 (g/ml) G Lab File ID: VC3A8485.D

Level: (low/med) MED Date Received: 9/15/00

% Moisture: not dec. 16 Date Analyzed: 9/21/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1634-04-4	Methyl t-butyl ether	290	U
71-43-2	Benzene	290	U
108-88-3	Toluene	440	U
103-65-1	n-Propylbenzene	150	U
98-82-8	Isopropylbenzene	150	U
100-41-4	Ethylbenzene	290	U
106-42-3	m&p Xylenes	290	U
95-47-6	o-Xylene	290	U
1330-20-7	Xylenes (total)	290	U
108-67-8	1,3,5-Trimethylbenzene	150	U
98-06-6	tert-Butylbenzene	150	U
95-63-6	1,2,4-Trimethylbenzene	150	U
135-98-8	sec-Butylbenzene	2000	
99-87-6	p-Isopropyltoluene	150	U
104-51-8	n-Butylbenzene	1600	
91-20-3	Naphthalene	3300	

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT424BE2

Lab Name: STL BALTIMORE Contract: -

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010275

Sample wt/vol: 29.7 (g/ml) G Lab File ID: SC3D1924.D

Level: (low/med) LOW Date Received: 09/13/00

% Moisture: 16 decanted:(Y/N) N Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/22/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
91-20-3	Naphthalene	1500	
83-32-9	Acenaphthene	1200	
86-73-7	Fluorene	1400	
85-01-8	Phenanthrene	3500	
120-12-7	Anthracene	250	J
206-44-0	Fluoranthene	97	J
129-00-0	Pyrene	390	J
56-55-3	Benzo(a)anthracene	400	U
218-01-9	Chrysene	70	J
205-99-2	Benzo(b)fluoranthene	400	U
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	U
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenz(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT424 SW1

Lab Name: STL BALTIMORE Contract: 001214

Lab Code: ST LABS Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010276

Sample wt/vol: 5.0 (g/ml) G Lab File ID: VA1C8912.D

Level: (low/med) LOW Date Received: 9/15/00

% Moisture: not dec. 12 Date Analyzed: 9/21/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
1634-04-4	Methyl t-butyl ether	2	U
71-43-2	Benzene	2	U
108-88-3	Toluene	3	U
103-65-1	n-Propylbenzene	1	U
98-82-8	Isopropylbenzene	1	U
100-41-4	Ethylbenzene	2	U
106-42-3	m&p Xylenes	2	U
95-47-6	o-Xylene	2	U
1330-20-7	Xylenes (total)	2	U
108-67-8	1,3,5-Trimethylbenzene	1	U
98-06-6	tert-Butylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
135-98-8	sec-Butylbenzene	1	U
99-87-6	p-Isopropyltoluene	1	U
104-51-8	n-Butylbenzene	1	U
91-20-3	Naphthalene	2	

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT424SW1

Lab Name: STL BALTIMORE Contract: -

Lab Code: ______ Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010276

Sample wt/vol: 29 (g/ml) G Lab File ID: SC3D1925.D

Level: (low/med) LOW Date Received: 09/13/00

% Moisture: 12 decanted:(Y/N) N Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/22/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ______

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	390	U
83-32-9	Acenaphthene	390	U
86-73-7	Fluorene	390	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenz(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT424 SW2

Lab Name: STL BALTIMORE Contract: 001214

Lab Code: ST LABS Case No.: ____ SAS No.: ____ SDG No.: ____

Matrix: (soil/water) SOIL Lab Sample ID: 0010277

Sample wt/vol: 5.0 (g/ml) G Lab File ID: VA1C8913.D

Level: (low/med) LOW Date Received: 9/15/00

% Moisture: not dec. 11 Date Analyzed: 9/21/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: ____ (uL) Soil Aliquot Volume: ____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
1634-04-4	Methyl t-butyl ether	2	U
71-43-2	Benzene	2	U
108-88-3	Toluene	3	U
103-65-1	n-Propylbenzene	1	U
98-82-8	Isopropylbenzene	1	U
100-41-4	Ethylbenzene	2	U
106-42-3	m&p Xylenes	2	U
95-47-6	o-Xylene	2	U
1330-20-7	Xylenes (total)	2	U
108-67-8	1,3,5-Trimethylbenzene	1	U
98-06-6	tert-Butylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
135-98-8	sec-Butylbenzene	1	U
99-87-6	p-Isopropyltoluene	1	U
104-51-8	n-Butylbenzene	1	U
91-20-3	Naphthalene	1	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT424SW2

Lab Name: STL BALTIMORE Contract: -

Lab Code: ______ Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010277

Sample wt/vol: 29.9 (g/ml) G Lab File ID: SC3D1926.D

Level: (low/med) LOW Date Received: 09/13/00

% Moisture: 11 decanted:(Y/N) N Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/22/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ______

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
91-20-3	Naphthalene	380	U
83-32-9	Acenaphthene	380	U
86-73-7	Fluorene	380	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenz(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT424 SW3

Lab Name: STL BALTIMORE Contract: 001214

Lab Code: ST LABS Case No.: ________ SAS No.: ________ SDG No.: ________

Matrix: (soil/water) SOIL Lab Sample ID: 0010278

Sample wt/vol: 5.1 (g/ml) G Lab File ID: VA1C8914.D

Level: (low/med) LOW Date Received: 9/15/00

% Moisture: not dec. 14 Date Analyzed: 9/21/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: ________ (uL) Soil Aliquot Volume: ________ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1634-04-4	Methyl t-butyl ether	2	U
71-43-2	Benzene	2	U
108-88-3	Toluene	3	U
103-65-1	n-Propylbenzene	1	U
98-82-8	Isopropylbenzene	1	U
100-41-4	Ethylbenzene	2	U
106-42-3	m&p Xylenes	2	U
95-47-6	o-Xylene	2	U
1330-20-7	Xylenes (total)	2	U
108-67-8	1,3,5-Trimethylbenzene	1	U
98-06-6	tert-Butylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
135-98-8	sec-Butylbenzene	1	U
99-87-6	p-Isopropyltoluene	1	U
104-51-8	n-Butylbenzene	1	U
91-20-3	Naphthalene	1	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
FT424SW3

Lab Name: STL BALTIMORE Contract: -

Lab Code: ______ Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010278

Sample wt/vol: 29.6 (g/ml) G Lab File ID: SC3D1927.D

Level: (low/med) LOW Date Received: 09/13/00

% Moisture: 14 decanted:(Y/N) N Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/22/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ______

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	CONCENTRATION	Q
91-20-3	Naphthalene	390	U
83-32-9	Acenaphthene	390	U
86-73-7	Fluorene	390	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenz(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT424 SW4

Lab Name: STL BALTIMORE Contract: 001214

Lab Code: ST LABS Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010279

Sample wt/vol: 5.1 (g/ml) G Lab File ID: VA1C8933.D

Level: (low/med) LOW Date Received: 9/15/00

% Moisture: not dec. 13 Date Analyzed: 9/22/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
1634-04-4	Methyl t-butyl ether	2	U
71-43-2	Benzene	2	U
108-88-3	Toluene	3	U
103-65-1	n-Propylbenzene	1	U
98-82-8	Isopropylbenzene	1	U
100-41-4	Ethylbenzene	2	U
106-42-3	m&p Xylenes	2	U
95-47-6	o-Xylene	2	U
1330-20-7	Xylenes (total)	2	U
108-67-8	1,3,5-Trimethylbenzene	1	U
98-06-6	tert-Butylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
135-98-8	sec-Butylbenzene	1	U
99-87-6	p-Isopropyltoluene	1	U
104-51-8	n-Butylbenzene	1	U
91-20-3	Naphthalene	1	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT424SW4

Lab Name: STL BALTIMORE Contract: -

Lab Code: ______ Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010279

Sample wt/vol: 31.3 (g/ml) G Lab File ID: SC3D1948.D

Level: (low/med) LOW Date Received: 09/13/00

% Moisture: 13 decanted:(Y/N) N Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/23/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ______

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	370	U
83-32-9	Acenaphthene	370	U
86-73-7	Fluorene	370	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenz(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT430 SW2

Lab Name: STL BALTIMORE Contract: 001214

Lab Code: ST LABS Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010201

Sample wt/vol: 5.1 (g/ml) G Lab File ID: VA1C8891.D

Level: (low/med) LOW Date Received: 9/15/00

% Moisture: not dec. 22 Date Analyzed: 9/20/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1634-04-4	Methyl t-butyl ether	2	U
71-43-2	Benzene	2	U
108-88-3	Toluene	4	U
103-65-1	n-Propylbenzene	1	U
98-82-8	Isopropylbenzene	1	U
100-41-4	Ethylbenzene	2	U
106-42-3	m&p Xylenes	2	U
95-47-6	o-Xylene	2	U
1330-20-7	Xylenes (total)	2	U
108-67-8	1,3,5-Trimethylbenzene	1	U
98-06-6	tert-Butylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
135-98-8	sec-Butylbenzene	1	U
99-87-6	p-Isopropyltoluene	1	U
104-51-8	n-Butylbenzene	1	U
91-20-3	Naphthalene	1	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT430SW2

Lab Name: STL BALTIMORE Contract: -

Lab Code: ______ Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010201

Sample wt/vol: 30.5 (g/ml) G Lab File ID: SC3D1921.D

Level: (low/med) LOW Date Received: 09/13/00

% Moisture: 22 decanted:(Y/N) N Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/22/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ______

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	420	U
83-32-9	Acenaphthene	420	U
86-73-7	Fluorene	420	U
85-01-8	Phenanthrene	420	U
120-12-7	Anthracene	420	U
206-44-0	Fluoranthene	420	U
129-00-0	Pyrene	420	U
56-55-3	Benzo(a)anthracene	420	U
218-01-9	Chrysene	420	U
205-99-2	Benzo(b)fluoranthene	420	U
207-08-9	Benzo(k)fluoranthene	420	U
50-32-8	Benzo(a)pyrene	420	U
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenz(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT430 SW3

Lab Name: STL BALTIMORE Contract: 001214

Lab Code: ST LABS Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010202

Sample wt/vol: 5.1 (g/ml) G Lab File ID: VA1C8892.D

Level: (low/med) LOW Date Received: 9/15/00

% Moisture: not dec. 16 Date Analyzed: 9/20/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
1634-04-4	Methyl t-butyl ether	2	U
71-43-2	Benzene	2	U
108-88-3	Toluene	4	U
103-65-1	n-Propylbenzene	1	U
98-82-8	Isopropylbenzene	1	U
100-41-4	Ethylbenzene	2	U
106-42-3	m&p Xylenes	2	U
95-47-6	o-Xylene	2	U
1330-20-7	Xylenes (total)	2	U
108-67-8	1,3,5-Trimethylbenzene	1	U
98-06-6	tert-Butylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
135-98-8	sec-Butylbenzene	1	U
99-87-6	p-Isopropyltoluene	1	U
104-51-8	n-Butylbenzene	1	U
91-20-3	Naphthalene	1	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT430SW3

Lab Name: STL BALTIMORE Contract:

Lab Code: ____ Case No.: ____ SAS No.: ____ SDG No.: ____

Matrix: (soil/water) SOIL Lab Sample ID: 0010202

Sample wt/vol: 29.4 (g/ml) G Lab File ID: SC3D1922.D

Level: (low/med) LOW Date Received: 09/13/00

% Moisture: 16 decanted:(Y/N) N Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/22/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
91-20-3	Naphthalene	400	U
83-32-9	Acenaphthene	400	U
86-73-7	Fluorene	400	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
206-44-0	Fluoranthene	400	U
129-00-0	Pyrene	400	U
56-55-3	Benzo(a)anthracene	400	U
218-01-9	Chrysene	400	U
205-99-2	Benzo(b)fluoranthene	400	U
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	U
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenz(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT430 SW4

Lab Name: STL BALTIMORE Contract: 001214

Lab Code: ST LABS Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010203

Sample wt/vol: 5.1 (g/ml) G Lab File ID: VA1C8893.D

Level: (low/med) LOW Date Received: 9/15/00

% Moisture: not dec. 25 Date Analyzed: 9/20/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1634-04-4	Methyl t-butyl ether	3	U
71-43-2	Benzene	3	U
108-88-3	Toluene	4	U
103-65-1	n-Propylbenzene	1	U
98-82-8	Isopropylbenzene	1	U
100-41-4	Ethylbenzene	3	U
106-42-3	m&p Xylenes	3	U
95-47-6	o-Xylene	3	U
1330-20-7	Xylenes (total)	3	U
108-67-8	1,3,5-Trimethylbenzene	1	U
98-06-6	tert-Butylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
135-98-8	sec-Butylbenzene	1	U
99-87-6	p-Isopropyltoluene	1	U
104-51-8	n-Butylbenzene	1	U
91-20-3	Naphthalene	1	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FT430SW4

Lab Name: STL BALTIMORE Contract: -

Lab Code: ______ Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010203

Sample wt/vol: 29.7 (g/ml) G Lab File ID: SC3D1923.D

Level: (low/med) LOW Date Received: 09/13/00

% Moisture: 25 decanted:(Y/N) N Date Extracted: 09/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/22/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ______

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
91-20-3	Naphthalene	450	U
83-32-9	Acenaphthene	450	U
86-73-7	Fluorene	450	U
85-01-8	Phenanthrene	450	U
120-12-7	Anthracene	450	U
206-44-0	Fluoranthene	450	U
129-00-0	Pyrene	450	U
56-55-3	Benzo(a)anthracene	450	U
218-01-9	Chrysene	450	U
205-99-2	Benzo(b)fluoranthene	450	U
207-08-9	Benzo(k)fluoranthene	450	U
50-32-8	Benzo(a)pyrene	450	U
193-39-5	Indeno(1,2,3-cd)pyrene	450	U
53-70-3	Dibenz(a,h)anthracene	450	U
191-24-2	Benzo(g,h,i)perylene	450	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTWC1

Lab Name: STL BALTIMORE Contract: 001226

Lab Code: ST LABS Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) WATER Lab Sample ID: 0010317

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC3A8686.D

Level: (low/med) LOW Date Received: 9/16/00

% Moisture: not dec. ______ Date Analyzed: 10/2/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: ______ (uL) Soil Aliquot Volume: ______ (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	UG/L	Q
75-01-4	Vinyl Chloride	5	U
75-35-4	1,1-Dichloroethene	5	U
56-23-5	Carbon Tetrachloride	5	U
78-93-3	2-Butanone	10	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
71-43-2	Benzene	5	U
79-01-6	Trichloroethene	5	U
127-18-4	Tetrachloroethene	5	U
108-90-7	Chlorobenzene	5	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTWC1

Lab Name: STL BALTIMORE Contract: ______

Lab Code: ______ Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) WATER Lab Sample ID: 0010317

Sample wt/vol: 200 (g/ml) ML Lab File ID: SA1D3985.D

Level: (low/med) LOW Date Received: 09/16/00

% Moisture: ______ decanted:(Y/N) N Date Extracted: 09/21/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/06/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ______

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
110-86-1	Pyridine	50	U
106-46-7	1,4-Dichlorobenzene	50	U
95-48-7	2-Methylphenol	50	U
	3+4-Methylphenol	50	U
67-72-1	Hexachloroethane	50	U
98-95-3	Nitrobenzene	50	U
87-68-3	Hexachlorobutadiene	50	U
88-06-2	2,4,6-Trichlorophenol	50	U
95-95-4	2,4,5-Trichlorophenol	250	U
121-14-2	2,4-Dinitrotoluene	50	U
118-74-1	Hexachlorobenzene	50	U
87-86-5	Pentachlorophenol	250	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTWC1

Lab Name: STL-Baltimore Contract: Ft. Totten

Lab Code: ________ Case No.: 001226 SAS No.: ______ SDG No.: ______

Matrix: (soil/water) WATER Lab Sample ID: 0010317

Sample wt/vol: 200 (g/ml) ML Lab File ID: 077FAESU.D

% Moisture: ______ decanted:(Y/N) N Date Received: 09/16/00

Extraction: (SepF/Cont/Sonc) ______ Date Extracted: 09/21/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/29/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ______ Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	UG/L	Q
58-89-9	gamma-BHC	0.25	U
76-44-8	Heptachlor	0.25	U
1024-57-3	Heptachlor Epoxide	0.25	U
72-20-8	Endrin	0.50	U
72-43-5	Methoxychlor	2.5	U
8001-35-2	Toxaphene	25	U
57-74-9	Chlordane	5.0	U

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

FTWC1

Lab Name: STL-Baltimore Contract: Fort Totten

Lab Code: STLB Case No.: SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0010317

Sample wt/vol: 31 (g/ml) G Lab File ID: 089FADSU.D

% Moisture: 9 decanted:(Y/N) N Date Received: 09/16/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 09/19/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/29/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) Y

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	71	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTWC1

Lab Name: STL-BALTIMORE Contract: ______

Lab Code: ______ Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) WATER Lab Sample ID: 0010317

Sample wt/vol: 100 (g/ml) ML Lab File ID: 498FABSM.D

% Moisture: ______ decanted:(Y/N) N Date Received: 09/16/00

Extraction: (SepF/Cont/Sonc) ______ Date Extracted: 09/21/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/29/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ______ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
	2,4-D	50	U
	2,4,5-TP	10	U

EPA SW846

LAB SAMPLE NUMBER

E10317

FORM 1
METALS ANALYSIS DATA SHEET

Laboratory: ST LABORATORIES

SDG No.: E10317

Matrix: WATER

Client ID: FTWC1

Percent Solids: 0.0

Date Received: 09/16/00

Results for: EXTRACTED metals

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	1.7	U		P
7440-39-3	Barium	970			P
7440-43-9	Cadmium	3.4	B		P
7440-47-3	Chromium	2.6	B		P
7439-92-1	Lead	492			P
7439-97-6	Mercury	0.10	U		CV
7782-49-2	Selenium	8.1			P
7440-22-4	Silver	2.2	U		P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740,
Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

FORM I
SAMPLE ANALYSIS RESULTS

Name: EA Laboratories
Case No.: 001226
EPA Sample No.: FTWC1
Sample matrix: SOIL
Total Solids: %

Contract: FT TOTTEN
SDG No.: 10317
Lab Sample ID No.: 10317
Date Received: 09/16/00

Lab ID	Parameter	Sample Conc.	Concentration Units	Analyzed Date
10317	IGNITABILITY	NEGATIVE		09/19/00
	pH	7.14	pH UNITS	09/18/00
	RELEASABLE CYANIDE	<0.10	mg/Kg	09/25/00
	RELEASABLE SULFIDE	<10.6	mg/Kg	09/22/00

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTWC2DL

Lab Name: STL BALTIMORE Contract: ______

Lab Code: ______ Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010318x40

Sample wt/vol: 29.5 (g/ml) G Lab File ID: SX3C026F.D

Level: (low/med) LOW Date Received: 09/16/00

% Moisture: 21 decanted:(Y/N) N Date Extracted: 09/19/00

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/29/00

Injection Volume: 1.0 (uL) Dilution Factor: 40.0

GPC Cleanup: (Y/N) N pH: ______

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
	DIESEL RANGE ORGANICS	5200000	D

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTWC3DL

Lab Name: STL BALTIMORE Contract: ______

Lab Code: ______ Case No.: ______ SAS No.: ______ SDG No.: ______

Matrix: (soil/water) SOIL Lab Sample ID: 0010319x3

Sample wt/vol: 30 (g/ml) G Lab File ID: SX3C027F.D

Level: (low/med) LOW Date Received: 09/16/00

% Moisture: 18 decanted:(Y/N) N Date Extracted: 09/19/00

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/29/00

Injection Volume: 1.0 (uL) Dilution Factor: 3.0

GPC Cleanup: (Y/N) N pH: ______

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	DIESEL RANGE ORGANICS	540000	D

080019

APPENDIX D
Photo Log

Building 137 UST - Excavating UST with backhoe.

Building 137 UST - Tank temporarily staged on plastic.

Building 137 UST - Holes in tank circled with spray paint.

Building 139 UST - Beginning excavation of tank.

Building 139 UST – Tank temporarily staged on plastic.

Building 139 UST – Tank temporarily staged on plastic.

Building 141 UST – Contaminated soil temporarily staged on plastic.

Building 407 – Beginning excavation of tank.

Building 407 UST – Removing tank from excavation.

Building 424 UST – Staging contaminated soil on plastic.

Building 424 UST – Removing contaminated soil (stained gray) from excavation.

Building 424 UST – Hole in tank after removal.

Building 424 UST – Tank temporarily staged on plastic.

Building 427 UST – Beginning excavation of tank.

Building 427 UST – Tank temporarily staged on plastic.

Building 430 UST – Beginning excavation of tank.

Building 430 UST – Contaminated soil (stained grayish-black) along sides of excavation; water from rain event.

Building 430 UST – Tank temporarily staged on plastic.

Building 505 UST - Tank temporarily staged on plastic.

Building 505 UST - Tank temporarily staged on plastic.

Building 506 UST - Tank temporarily staged on plastic.

Building 506 UST - Tank temporarily staged on plastic.

Building 512 UST - Tank temporarily staged on plastic.

Building 512 UST - Tank temporarily staged on plastic.

Building 513 UST - Tank temporarily staged on plastic.

Building 513 UST - Tank temporarily staged on plastic.

APPENDIX E
Non-Hazardous Material Manifests

MONTECALVO DISPOSAL SERVICES, INC. **MANIFEST #:** 00019

1050 State Street Box #15, Perth Amboy, NJ 08861-2050
Phone (732) 293-0898 Fax (732) 293-0587

Log Number

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: Fort Totten Shipping Location: Same

Address: Northern & Bell Blvd. / Bayside Queens NY Address: ______

Phone No. 718 630 4485 Phone No. ______

Codes

Approval No.	Description of Material	Gross Weight / Tare Weight / Net Weight	Net Weight tons
	NON-HAZ Soil		

I hereby certify that the above named material does not contain free liquid as defined by 40 CFC Part 260.10 or any applicable state law, is not a hazardous waste as defined by 50 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged, and is in proper condition for transportation according to applicable regulations.

Greg Zegarelli for Fort Hamilton Environmental

Generator Authorized Agent Name Signature Shipment date 3/15/00

TRANSPORTER

Transporter Name: BV Bickle Driver Name (print): Keith DeBonis

Address: Pompton Plains / NJ 07444 Vehicle License No./State: 1716PB NY

Truck Number: 13

State Permit #: NJ-479 * wait time 8:00am - 4 45 = 8 3/4 hrs *

I hereby certifiy that the above named material was picked up at the generator site listed above.

I hereby certify that the above named material was Delivered without incident to the destination listed below.

DESTINATION

Site Name: Bayshore Recycling Phone No. 732 293 0700

Address: 1050 State St. / Perth Amboy NJ State Permit # 10103

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent

Generator (Pink)

MONTECALVO DISPOSAL SERVICES, INC.
1050 State Street Box #15, Perth Amboy, NJ 08861-2050
Phone (732) 293-0898 Fax (732) 293-0587

MANIFEST #: 00020

Log Number

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: Fort Totten Shipping Location: Same

Address: Northern Bell Blvd Address:

Bayside, Queens N.Y. 11359

Phone No. 715-630-4485 Phone No.

Codes

Approval No.

Description of Material

Non-Haz Soil

Gross Weight

Tare Weight

Net Weight

Net Weight tons

I hereby certify that the above named material does not contain free liquid as defined by 40 CFC Part 260.10 or any applicable state law, is not a hazardous waste as defined by 50 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged, and is in proper condition for transportation according to applicable regulations.

Greg [illegible] For Fort Hamilton Environmental Division 3/15/00

Generator Authorized Agent Name Signature Shipment date

TRANSPORTER

Transporter Name: B.W. Beckle Driver Name (print): Robert Regeling

Address: Pompton Plains Vehicle License No./State: 5481 PA. NY

N.J. 07444 Truck Number: 10

State Permit #: N.J. 479 * 8:00AM - 6:00PM 9

I hereby certifiy that the above named material was picked up at the generator site listed above.

I hereby certify that the above named material was Delivered without incident to the destination listed below.

DESTINATION

Site Name: Bayshore Recycling Phone No. 732-293-0700

Address: 1050 State St State Permit # 10103

Perth Amboy N.J.

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent

Generator (Pink)

MONTECALVO DISPOSAL SERVICES, INC. **MANIFEST #:** 00022

1050 State Street Box #15, Perth Amboy, NJ 08861-2050
Phone (732) 293-0898 Fax (732) 293-0587

Log Number

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: Fort Totten Shipping Location: Same

Address: Weather - Bell Blvd Address:

Bayside, Queens N.Y. 11359

Phone No. 718-630-4485 Phone No.

Codes

Approval No.	Description of Material	Gross Weight / Tare Weight / Net Weight	Net Weight tons
	Non Haz Soil		

I hereby certify that the above named material does not contain free liquid as defined by 40 CFC Part 260.10 or any applicable state law, is not a hazardous waste as defined by 50 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged, and is in proper condition for transportation according to applicable regulations.

Greg [illegible] for Fort Hamilton Environmental Division 3/15/00

Generator Authorized Agent Name Signature Shipment date

TRANSPORTER

Transporter Name: Blue Bell [illegible] Driver Name (print): [illegible]

Address: Pompton Plains Vehicle License No./State: 1715 PB

N.J. - 07444 Truck Number: 12

State Permit #: N.J. 4179

wait time [illegible] 5:30

[illegible]

I hereby certify that the above named material was picked up at the generator site listed above.

I hereby certify that the above named material was Delivered without incident to the destination listed below.

DESTINATION

Site Name: Bayshore Recycling Phone No. 732-293-0700

Address: 1050 State St State Permit # 10103

Perth Amboy, N.J.

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent

Generator (Pink)

MONTECALVO DISPOSAL SERVICES, INC.
1050 State Street Box #15, Perth Amboy, NJ 08861-2050
Phone (732) 293-0898 Fax (732) 293-0587

MANIFEST #: 00023

Log Number

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: Fort Totten Shipping Location: Same

Address: [illegible] Bell Blvd Address:

Bayside Queens NY 11359

Phone No. 718-630-4455 Phone No.

Arrive 4:05
Leave 6:15

Codes

Approval No.	Description of Material	Gross Weight / Tare Weight / Net Weight	Net Weight tons
	Non-Haz Soil		

I hereby certify that the above named material does not contain free liquid as defined by 40 CFC Part 260.10 or any applicable state law, is not a hazardous waste as defined by 50 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged, and is in proper condition for transportation according to applicable regulations.

[illegible] for Fort Hamilton Environmental Division 3/16/00

Generator Authorized Agent Name Signature Shipment date

TRANSPORTER

Transporter Name: Bill Brickle Driver Name (print): [illegible]

Address: Pompton Plains Vehicle License No./State: AE 77B

N.J. - 07444 Truck Number: AMB 15

State Permit #: N.J. 479

I hereby certify that the above named material was picked up at the generator site listed above.

I hereby certify that the above named material was Delivered without incident to the destination listed below.

DESTINATION

Site Name: Bayshore Recycling Phone No. 732-293-0700

Address: 1050 State St State Permit # 10103

Perth Amboy N.J.

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent

Generator (Pink)

MONTECALVO DISPOSAL SERVICES, INC.
1050 State Street Box #15, Perth Amboy, NJ 08861-2050
Phone (732) 293-0898 Fax (732) 293-0587

MANIFEST #: 00026

Log Number

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: Fort Totten Shipping Location: Same

Address: Northern Ball Blvd Address:

Bayside Queens NY 11359

Phone No. 718-630-4465 Phone No.

Hour 4:00 ... Leave: 600 ...

Codes

Approval No.	Description of Material	Gross Weight / Tare Weight / Net Weight	Net Weight tons
	Non-Haz Soil		

I hereby certify that the above named material does not contain free liquid as defined by 40 CFC Part 260.10 or any applicable state law, is not a hazardous waste as defined by 50 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged, and is in proper condition for transportation according to applicable regulations.

Greg ... for Fort Hamilton Environmental Division 3/16/00

Generator Authorized Agent Name Signature Shipment date

TRANSPORTER

Transporter Name: B.W. Beckle Driver Name (print): [illegible]

Address: Pompton Plains Vehicle License No./State: [illegible]

N.J. 07444 Truck Number: [illegible]

State Permit #: N.J. 479

I hereby certify that the above named material was picked up at the generator site listed above.

I hereby certify that the above named material was Delivered without incident to the destination listed below.

DESTINATION

Site Name: Bayshore Recycling Phone No. 732-293-0700

Address: 1050 State St. State Permit # 10103
Perth Amboy, N.J.

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent

Generator (Pink)

MONTECALVO DISPOSAL SERVICES, INC.
1050 State Street Box #15, Perth Amboy, NJ 08861-2050
Phone (732) 293-0898 Fax (732) 293-0587

MANIFEST #: 00029

Log Number

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name: Fort Totten
Shipping Location: Same

Address: Northern + Bell Blvds.
Bayside, Queens NY 11359
Address:

Phone No. 718-630-4485
Phone No.

Codes

Approval No.	Description of Material	Gross Weight / Tare Weight / Net Weight	Net Weight tons
	Non-Haz Soil		

I hereby certify that the above named material does not contain free liquid as defined by 40 CFC Part 260.10 or any applicable state law, is not a hazardous waste as defined by 50 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged, and is in proper condition for transportation according to applicable regulations.

Greg Symde for Fort Ham, Hon Environmental Division
Generator Authorized Agent Name — Signature — Shipment date 3/15/00

TRANSPORTER

Transporter Name: Montecalvo Disposal
Driver Name (print): Shawn Daniel

Address: 1050 State Street
Perth Amboy
Vehicle License No./State: AE580H / NJ
Truck Number: 146

State Permit #: 10103

I hereby certify that the above named material was picked up at the generator site listed above.

I hereby certify that the above named material was Delivered without incident to the destination listed below.

DESTINATION

Site Name: Bayshore Recycling
Phone No. 732-293-0700

Address: 1050 State St
Perth Amboy NJ 08861-2050
State Permit # 1216001406

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent

Generator (Pink)